HISTORY INFORMATION FOR THE FOLLOWING MANUAL:

SERVICE MANUAL

FX CHASSIS

MODEL NAME	REMOTE COMMANDER	DESTINATION
KDL-52S4100	RM-YD025	US
KDL-52S4100	RM-YD025	CANADA

ORIGINAL MANUAL ISSUE DATE: 10/2008

☛ :UPDATED ITEMS

REVISION DATE	SUBJECT
10/2008	No revisions or updates are applicable at this time.
12/2008	Updated G Board Schematic. Replaced pages 44-46.

LCD DIGITAL COLOR TELEVISION

SONY®

9-883-808-02

SERVICE MANUAL

FX CHASSIS

MODEL NAME	REMOTE COMMANDER	DESTINATION
KDL-52S4100	*RM-YD025*	*US*
KDL-52S4100	*RM-YD025*	*CANADA*

KDL-52S41000

RM-YD025

LCD DIGITAL COLOR TELEVISION

SONY®

9-883-808-02

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SPECIFICATIONS

Power Requirements 120V - 240V AC, 50/60Hz

VIDEO (IN) 1/2:

S Video (4-Pin Mini DIN) (Video 1 only)

Y: 1.0 Vp-p, 75 ohms unbalanced, sync negative

C: 0.286 Vp-p (Burst signal), 75 ohms

Video

1 Vp-p, 75 ohms unbalanced, sync negative

Audio

500 mVrms (100% modulation)

Impedance:47 kilohms

COMPONENT IN 1/2:

YP_BP_R (Component Video)

Y:1.0 Vp-p, 75 ohms unbalanced, sync negative

P_B:0.7 Vp-p, 75 ohms

P_R:0.7 Vp-p, 75 ohms

Signal format: 480i, 480p, 720p, 1080i, 1080p

Audio

500 mVrms (100% modulation)

Impedance: 47 kilohms

HDMI IN 1/2/3:

HDMI

Video: 480i, 480p, 720p, 1080i, 1080p, 1080/24p

Audio: Two channel linear PCM 32, 44.1, and 48 kz, 16, 20 and 24 bits

Audio (HDMI IN 1 only):

500 mVrms (100% modulation)

Impedance: 47 kilohms

AUDIO OUT:

500 mVrms (100% modulation)

More than 500 mVrms (Fixed)

DIGITAL AUDIO OUT (OPTICAL):

Optical Digital Audio Output (PCM/Dolby Digital)

PC IN:

Analog RGB (D-sub 15-pin):

0.7 Vp-p, 75 ohms, positive

Audio (Stereo mini jack):

500 mVrms

Impedance: 47 kilohms

Trademark Information

Macintosh is a trademark of Apple Inc., registered in the U.S. and other countries.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.

Blu-ray Disc is a trademark.
"BRAVIA", BRAVIA and ▣ are trademarks or registered trademarks of Sony Corporation.

"PLAYSTATION" is a registered trademark and "PS3" is a trademark of Sony Computer Entertainment Inc.

Design and specifications are subject to change without notice.

	KDL-52S4100
Power Consumption	
in use	295W
in standby	Less than 1.0 W
Speaker Output (W)	10W + 10W
Speaker/Full Range (2)	
mm	65 x 147 mm
in	$2^{5/8}$ x $5^{7/8}$ in
Dimensions (W x H x D)	
with stand	
mm	1274 x 873 x 346
in	$50^{1/4}$ x $34^{3/8}$ x $13^{5/8}$ in
without stand	
mm	1274 x 833 x 119 mm
in	$50^{1/4}$ x $32^{7/8}$ x $4^{3/4}$ in
wall-mount hole pattern (mm)	300 x 300
wall-mount screw size (mm)	M6 8-12
Mass	
with stand	
kg	38.2 kg
lbs	84 lbs 4 oz
without stand	
kg	32.8 kg
lbs	72 lbs 5 oz

All measurements are approximations.

Television system

NTSC	American TV Standard
ATSC (8VSB terrestrial)	ATSC compliant 8VSB
QAM on cable	ANSI/SCTE 07 2000

Channel coverage

	Analog	Digital
Terrestrial	2-69	2-69
Cable	1-135	1-135

Antenna

75-ohm external terminal for VHF/UHF

Panel System

LCD (Liquid Crystal Display) Panel

Display Resolution (horizontal x vertical):

1,920 dots x 1,080 lines

Screen Size (measured diagonally)

approx. 52 inches

Supplied Accessories

Remote Commander RM-YD025
Two Size AA (R6) Batteries
AC Power Cord
Cable Band
Operating Instructions
Quick Setup Guide
Warranty Card

Optional Accessories

Connecting Cables
Support Belt Kit
Wall-Mount Bracket
SU-WL500

WARNINGS AND CAUTIONS - ENGLISH

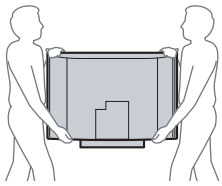
CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

CARRYING THE TV

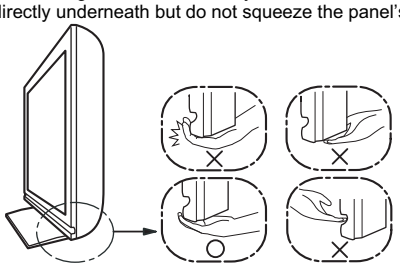
To avoid dropping the TV and causing serious injury, be sure to follow these guidelines:

- Before carrying the TV, disconnect all cables.
- Carrying the large size TV requires two or more people.
- When you carry the TV, place your hand as illustrated and hold it securely. Do not put stress on the LCD panel.

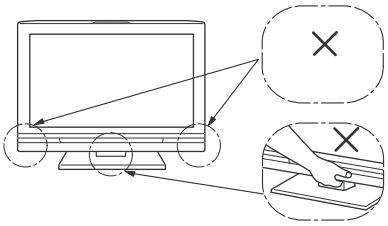


- When carrying, do not subject the TV to shocks or vibration, or excessive force.

- When lifting or moving the TV, hold it firmly from the bottom. Place your palm directly underneath but do not squeeze the panel's speaker grille area.



- When carrying the TV, to avoid pinching your hands or fingers do not put your hands between the TV and stand, or hold the bottom corner of the TV.



WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the ac power line.

⚠ SAFETY-RELATED COMPONENT WARNING!!

Components identified by shading and ⚠ mark on the schematic diagrams, exploded views, and in the parts list are critical for safe operation. Replace these components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. Circuit adjustments that are critical for safe operation are identified in this manual. Follow these procedures whenever critical components are replaced or improper operation is suspected.

WARNINGS AND CAUTIONS - FRENCH

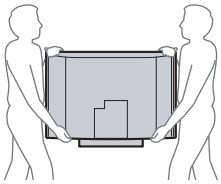
ATTENTION!!

Ces instructions de service sont à l'usage du personnel de service qualifié seulement. Pour prévenir le risque de choc électrique, ne pas faire l'entretien autre que celui contenu dans le Mode d'emploi à moins que vous soyez qualifié faire ainsi.

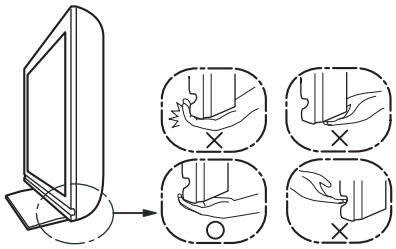
TRANSPORTER LE TÉLÉVISEUR

Pour éviter d'échapper le téléviseur et de causer des blessures graves, assurez-vous de suivre ces directives :

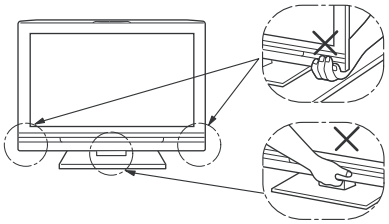
- Avant de transporter le téléviseur, débranchez tous les câbles.
- Il faut deux personnes ou plus pour transporter le téléviseur de grande dimension.
- Lorsque vous transportez le téléviseur, placez votre main tel qu'illustré et tenez-le fermement. N'imposez pas de charge sur le panneau ACL.
- Lorsque vous transportez le téléviseur, ne le soumettez pas à des chocs, à des vibrations ou à une force excessive.



- Lorsque vous soulevez ou déplacez le téléviseur, tenez-le fermement à partir du bas. Placez votre paume directement en dessous, mais n'appuyez pas sur le panneau avant ou la région encastrée.



- Lorsque vous transportez le téléviseur, pour éviter de pincer vos mains ou vos doigts, ne placez pas vos mains entre le téléviseur et le suppor ou ne tenez pas le coin inférieur du téléviseur.



Afin d'eviter tout risque d'electrocution provenant d'un châssis sous tension, un transformateur d'isolement doit etre utilisé lors de tout dépannage. Le châssis de ce récepteur est directement raccordé à l'alimentation du secteur.

⚠ ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

Les composants identifies par une trame et par une marque ⚠ sur les schemas de principe, les vues explosees et les listes de pieces sont d'une importance critique pour la securite du fonctionnement. Ne les remplacer que par des composants Sony dont le numero de piece est indique dans le present manuel ou dans des supplements publies par Sony. Les reglages de circuit dont l'importance est critique pour la securite du fonctionnement sont identifies dans le present manuel. Suivre ces procedures lors de chaque remplacement de composants critiques, ou lorsqu'un mauvais fonctionnement suspecte.

SAFETY-RELATED COMPONENT WARNING

There are critical components used in LCD color TVs that are important for safety. These components are identified with shading and ⚠ mark on the schematic diagrams and the electrical parts list. It is essential that these critical parts be replaced only with the part number specified in the electrical parts list to prevent electric shock, fire, or other hazard.

NOTE: Do not modify the original design without obtaining written permission from the manufacturer or you will void the original parts and labor guarantee.

USE CAUTION WHEN HANDLING THE LCD PANEL

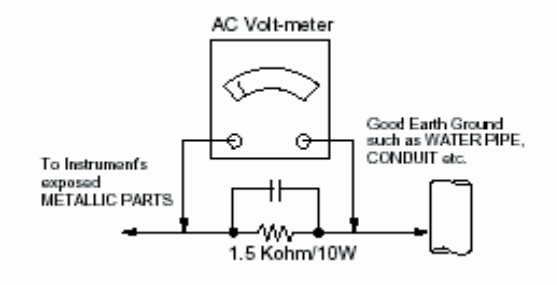
When repairing the LCD panel, be sure you are grounded by using a wrist band.

When installing the LCD panel on a wall, the LCD panel must be secured using the 4 mounting holes on the rear cover.

To avoid damaging the LCD panel:

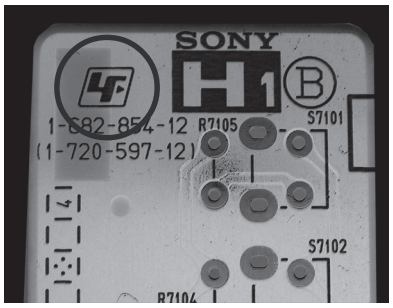
- → do not press on the panel or frame edge to avoid the risk of electric shock.
- → do not scratch or press on the panel with any sharp objects.
- → do not leave the module in high temperatures or in areas of high humidity for an extended period of time.
- → do not expose the LCD panel to direct sunlight.
- → avoid contact with water. It may cause a short circuit within the module.
- → disconnect the AC adapter when replacing the backlight (CCFL) or inverter circuit. (High voltage occurs at the inverter circuit at 650Vrms.)
- → always clean the LCD panel with a soft cloth material.
- → use care when handling the wires or connectors of the inverter circuit. Damaging the wires may cause a short.
- → protect the panel from ESD to avoid damaging the electronic circuit (C-MOS).

LEAKAGE CURRENT HOT CHECK CIRCUIT



example 1

The circuit boards used in these models have been processed using Lead Free Solder. The boards are identified by the LF logo located close to the board designation e.g. H1 etc [see example]. The servicing of these boards requires special precautions to be taken as outlined below.



It is strongly recommended to use Lead Free Solder material in order to guarantee optimal quality of new solder joints.
Lead Free Solder is available under the following part numbers :

Part number	Diameter	Remarks
7-640-005-19	0.3mm	0.25Kg
7-640-005-20	0.4mm	0.50Kg
7-640-005-21	0.5mm	0.50Kg
7-640-005-22	0.6mm	0.25Kg
7-640-005-23	0.8mm	1.00Kg
7-640-005-24	1.0mm	1.00Kg
7-640-005-25	1.2mm	1.00Kg
7-640-005-26	1.6mm	1.00Kg

Due to the higher melting point of Lead Free Solder the soldering iron tip temperature needs to be set to 370 degrees centigrade.
This requires soldering equipment capable of accurate temperature control coupled with a good heat recovery characteristics.

For more information on the use of Lead Free Solder, please refer to *http://www.sony-training.com*

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.

2. Check the interboard wiring to ensure that no wires are "pinched" or touching high-wattage resistors.

3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.

4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.

5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.

6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

Leakage Test

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.

2. A battery-operated AC milliampmeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble- light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

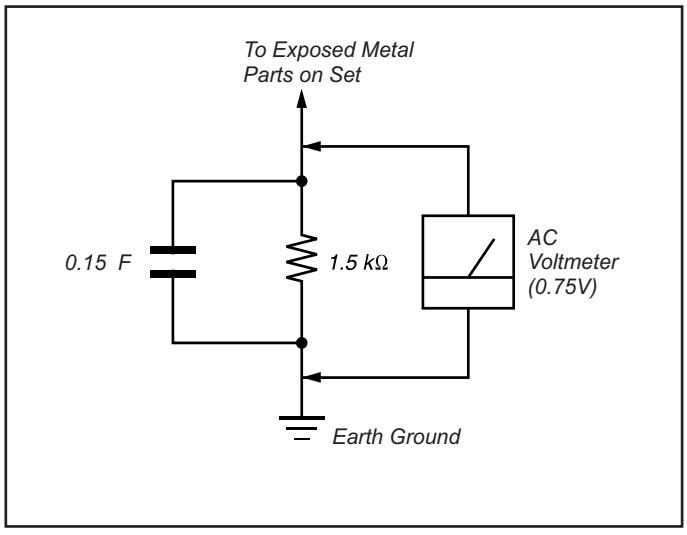


Figure A. Using an AC voltmeter to check AC leakage.

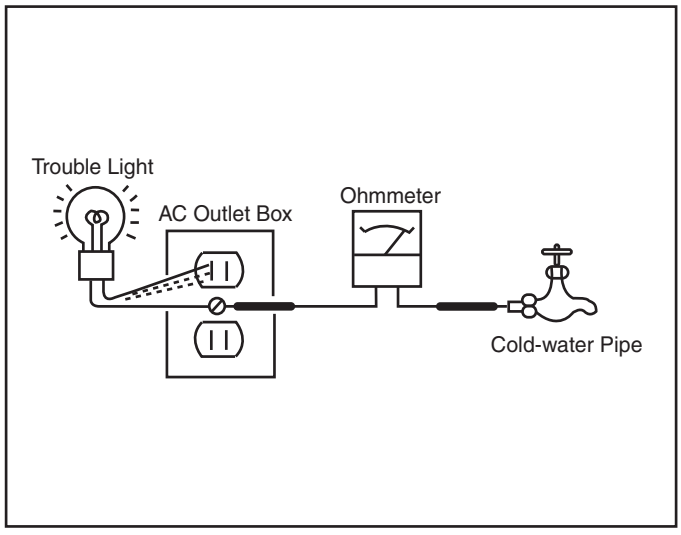
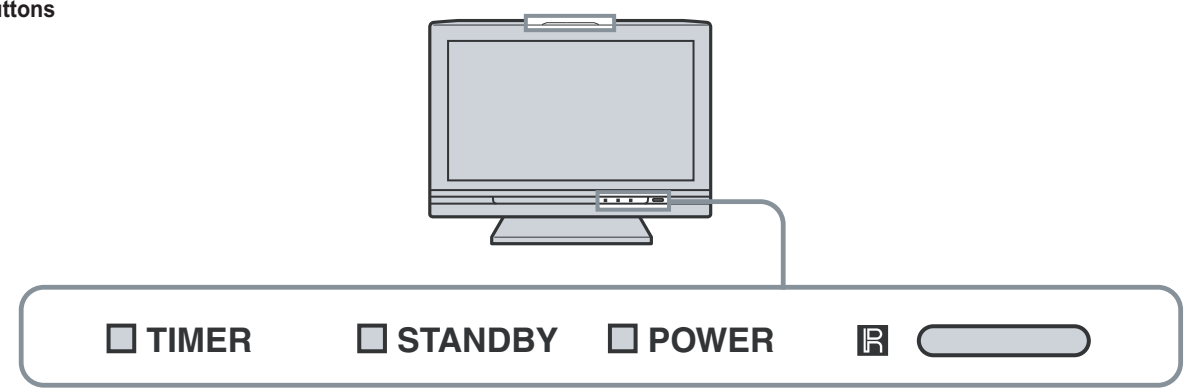


Figure B. Checking for earth ground.

SELF-DIAGNOSTIC FUNCTION

IMPORTANT:
The units in this manual DO NOT contain a self-diagnostic function. If an error occurs, the TV will not stay on. It is our recommendation that if a repair is required for this set, the technician should bring both the A Board and the G Board to the customer location.

Control Buttons

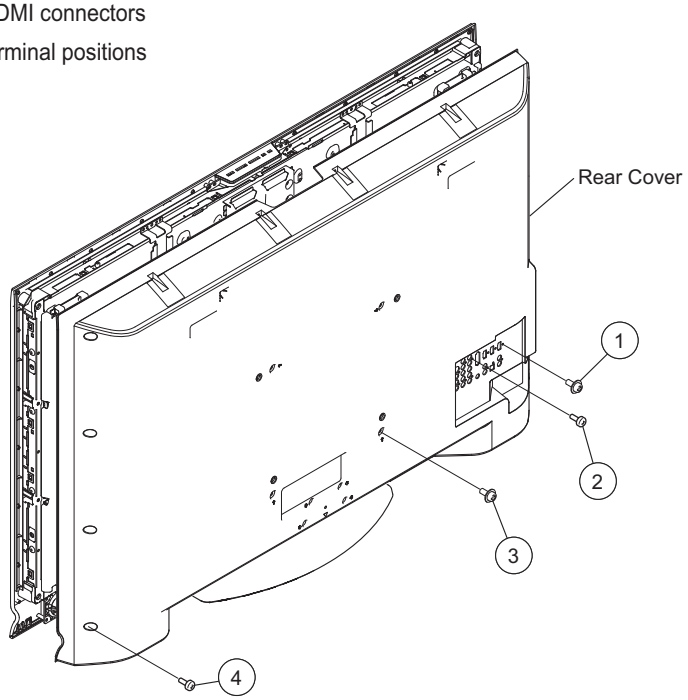


Description of LED Indictors
The units in this manual DOES NOT contain a self-diagnostic function.

SECTION 1: DISASSEMBLY

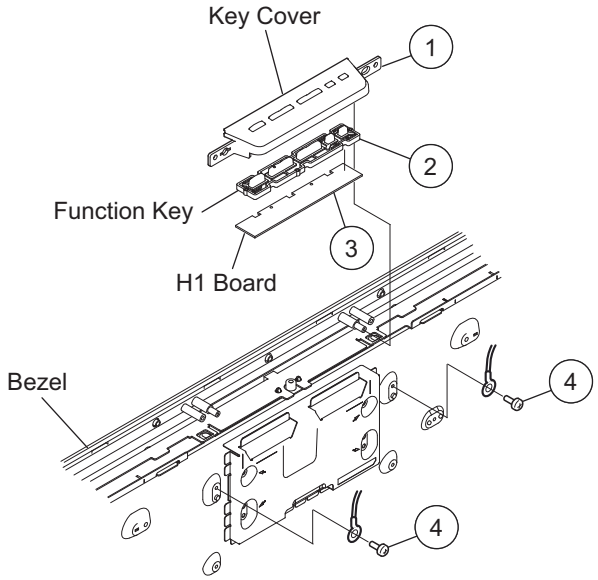
1-1. REAR COVER REMOVAL

(1) Remove 2 screws from HDMI connectors
(2) Remove 2 screws from terminal positions
(3) Remove 4 screws
(4) Remove 20 screws



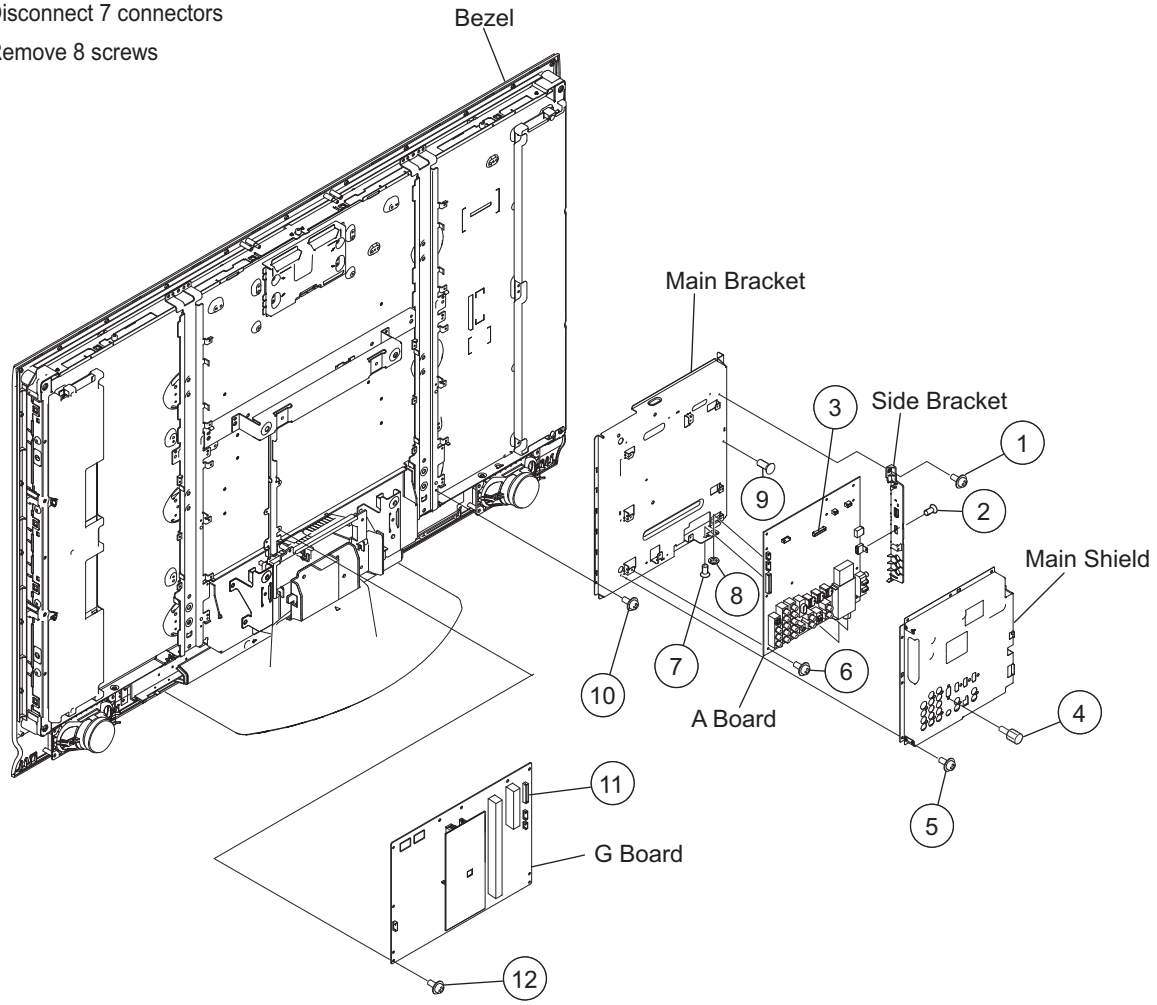
1-2. FUNCTION KEY AND H1 BOARD REMOVAL

(1) Slide out Function Unit from Bezel
(2) Release hooks and remove Function Key and H1 Board from Key Cover
(3) Disconnect 1 connector
(4) Remove 2 screws and release Ground Wire from LCD Panel



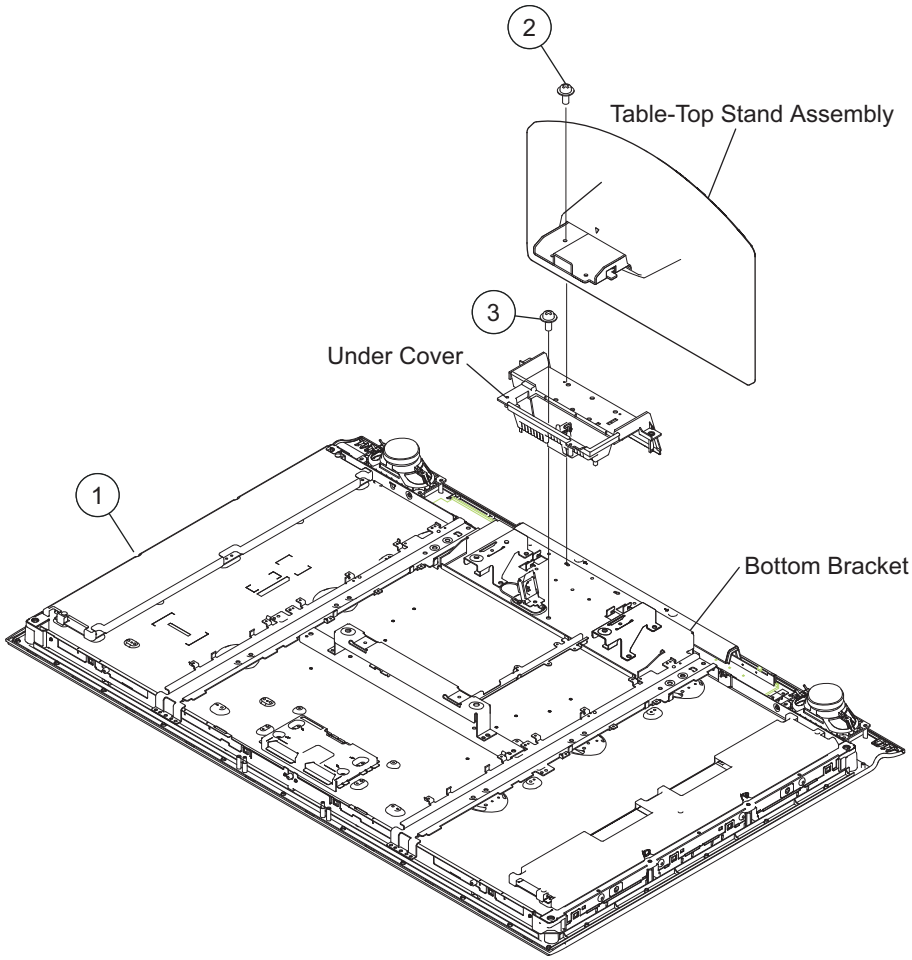
1-3. A BOARD AND G BOARD REMOVAL

(1) Remove 1 screw from Side Bracket
(2) Remove 1 screw from HDMI position
(3) Disconnect 4 connectors
(4) Remove 2 HEX screws
(5) Remove 8 screws
(6) Remove 9 screws
(7) Remove 1 FH screw
(8) Remove Hexagon Nut from tuner
(9) Remove 1 FH screw
(10) Remove 5 screws
(11) Disconnect 7 connectors
(12) Remove 8 screws



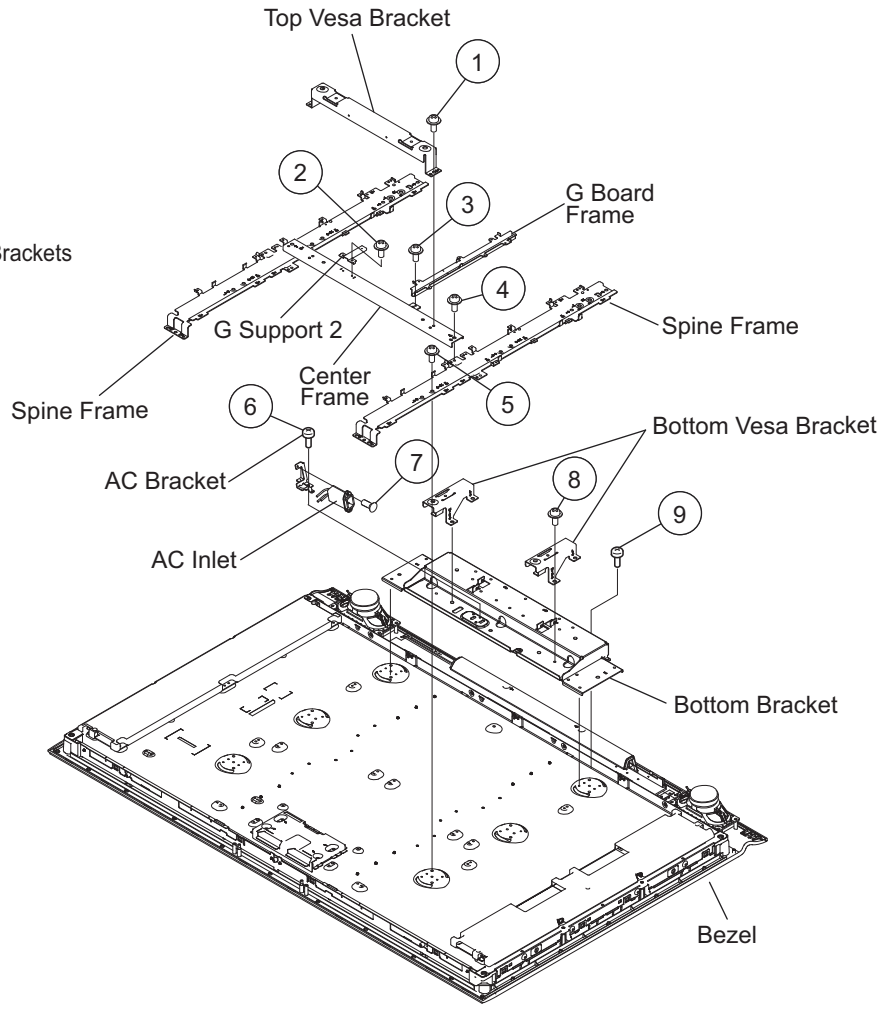
1-4. TABLE-TOP STAND ASSEMBLY AND UNDER COVER REMOVAL

(1) Place the TV set face down onto the soft cloth
(2) Remove 4 screws
(3) Remove 1 screw



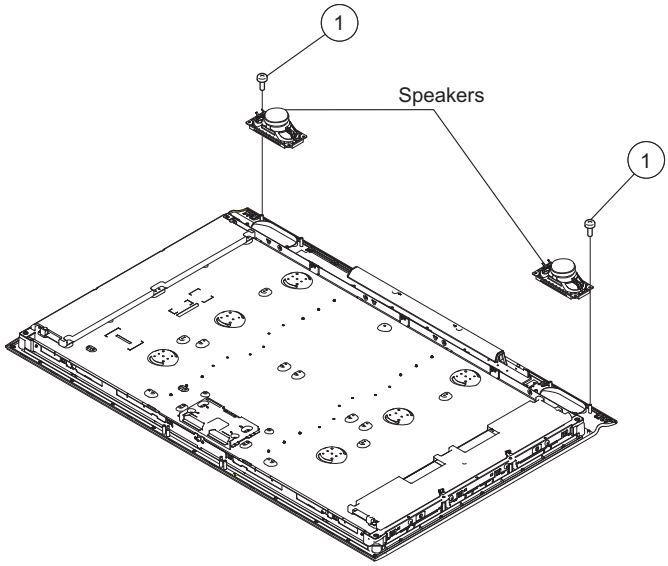
1-5. AC INLET, STRUCTURAL FRAMES AND BRACKETS REMOVAL

(1) Remove 2 screws from Top Vesa Bracket
(2) Remove 2 screws from G Support 2
(3) Remove 2 screws from G Board frame
(4) Remove 2 screws from Center Frame
(5) Remove 10 screws from Spine Frames
(6) Remove 1 screw from AC Bracket
(7) Remove 2 screws from AC Inlet
(8) Remove 4 screws from both Bottom Vesa Brackets
(9) Remove 4 screws from Bottom Bracket



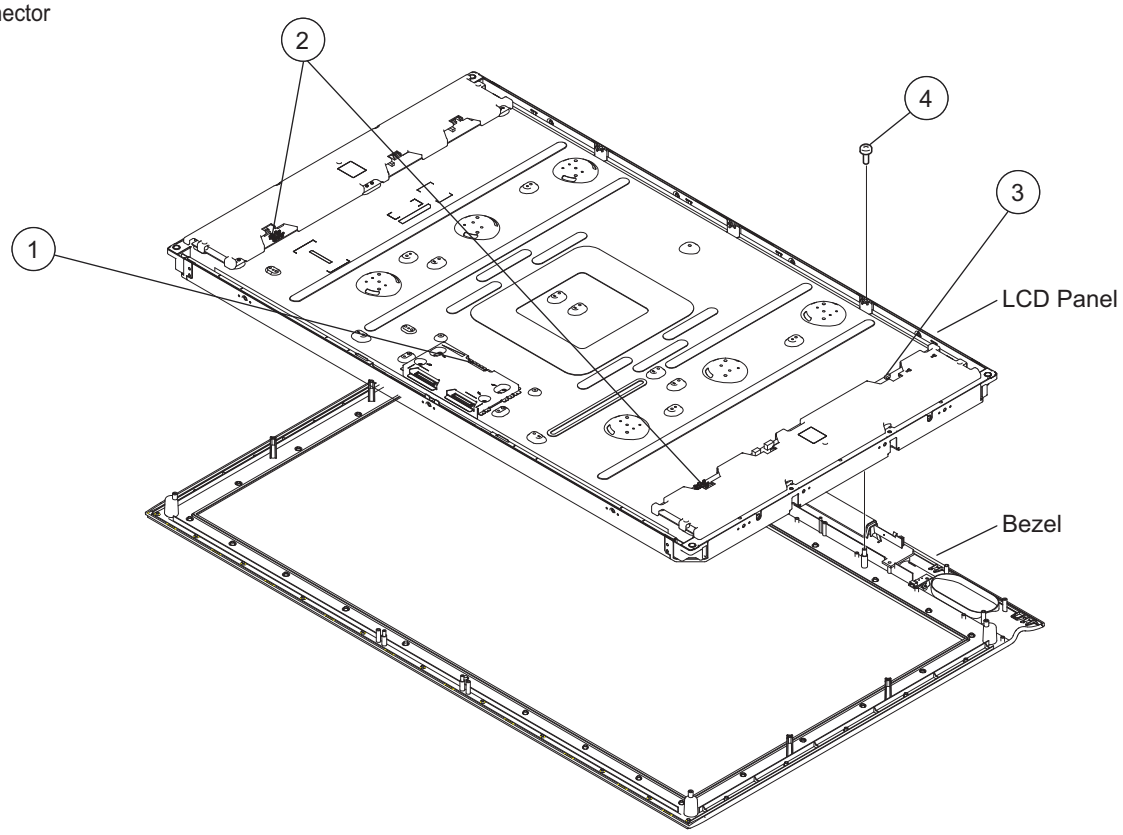
1-6. LOUDSPEAKER REMOVAL

(1) Remove 8 screws from both Loudspeakers



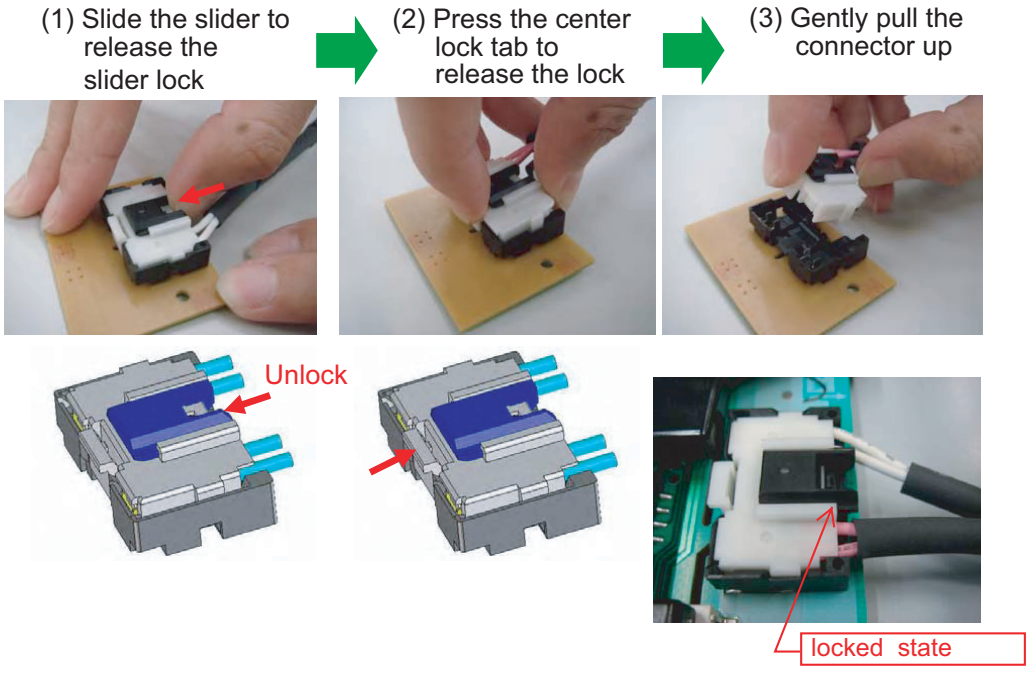
1-7. LCD PANEL REMOVAL

1. Disconnect LVDS connector
2. Disconnect 2 Inverter (Balancer Board) connector assemblies (See Detaching the Inverter Connector Assembly)
3. Disconnect 1 connector
4. Remove 3 screws



1-7-1. DETACHING THE INVERTER CONNECTOR ASSEMBLY

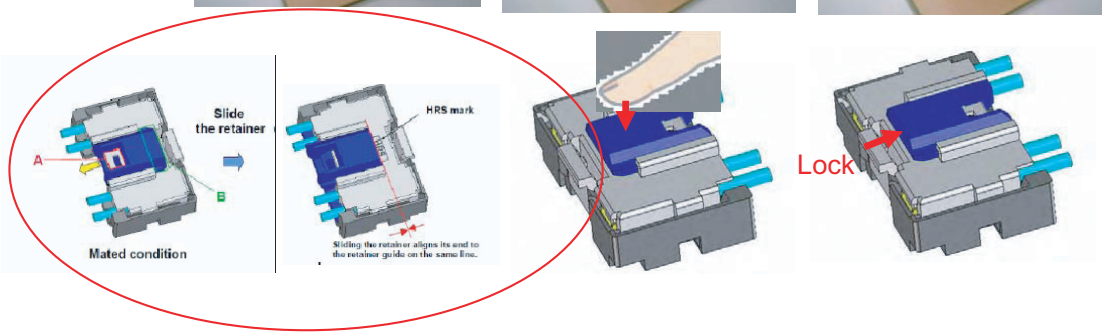
CAUTION: Follow the instructions provided to remove the Inverter Connector Assembly

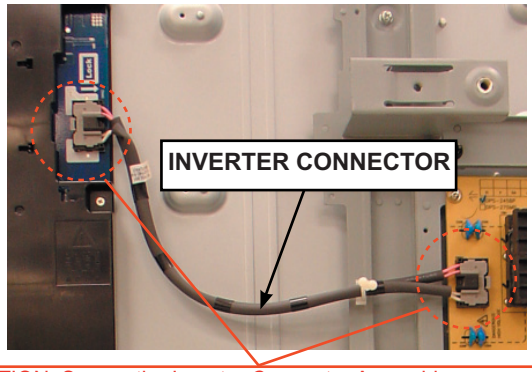

(1) Slide the slider to release the slider lock
(2) Press the center lock tab to release the lock
(3) Gently pull the connector up
Unlock
locked state

1-7-2. ATTACHING THE INVERTER CONNECTOR ASSEMBLY

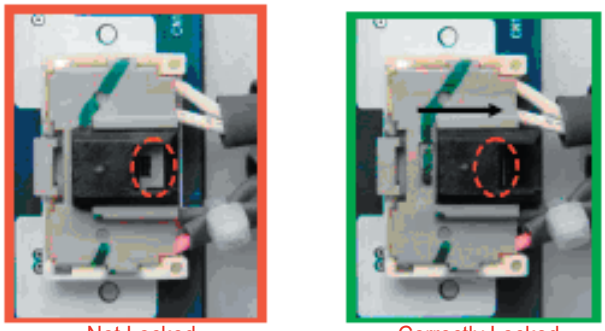
CAUTION: Follow the instructions provided to reconnect the Inverter Connector Assembly.

(1) Hold the center of the connector → (2) Press the center of the connector to insert it → (3) Slide the slider to lock the connector





CAUTION: Secure the Inverter Connector Assembly by locking the housing in place as shown.



1-7-3. CLEANING THE LCD PANEL

CAUTION: When cleaning the TV, be sure to unplug the power cord to avoid any chance of electric shock.

Clean the cabinet of the TV with a dry soft cloth.

Wipe the LCD screen gently with a soft cloth.

→ Stubborn stains may be removed with a cloth slightly moistened with a solution of mild soap and warm water.

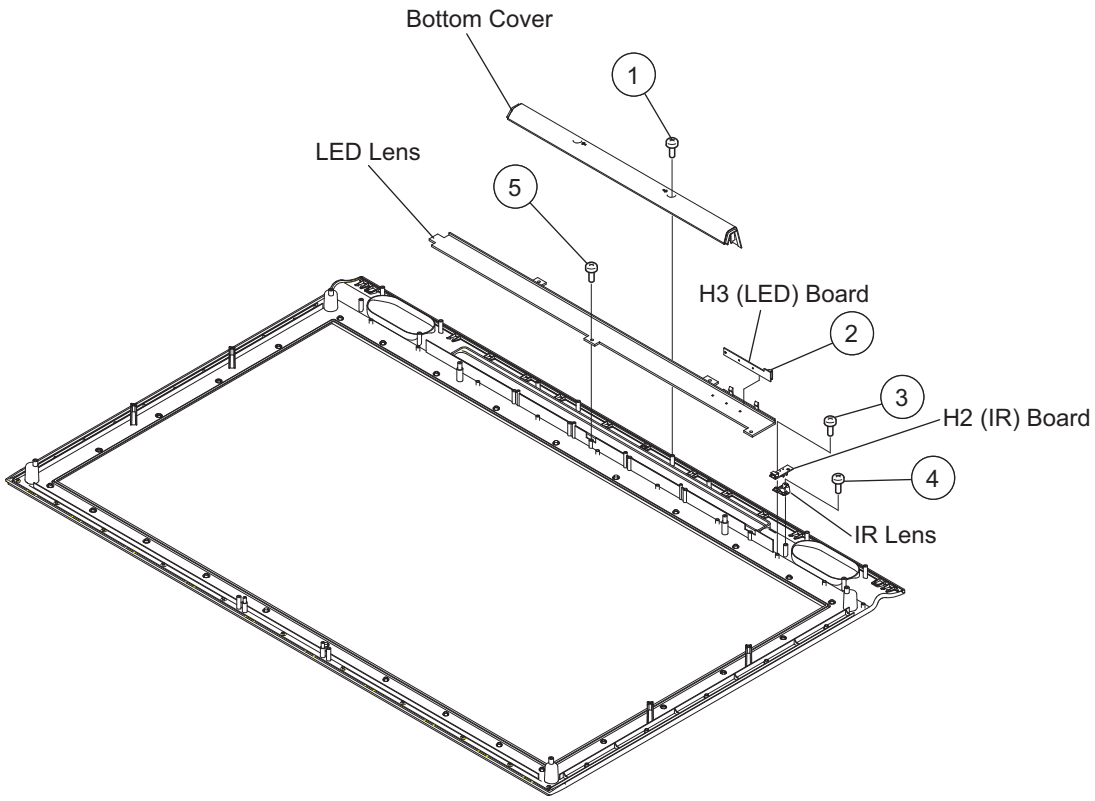
→ If using a chemically pretreated cloth, please follow the instruction provided on the package.

→ Never use strong solvents such as a thinner, alcohol or benzine for cleaning.

→ Periodic vacuuming of the ventilation openings is recommended to ensure to proper ventilation.

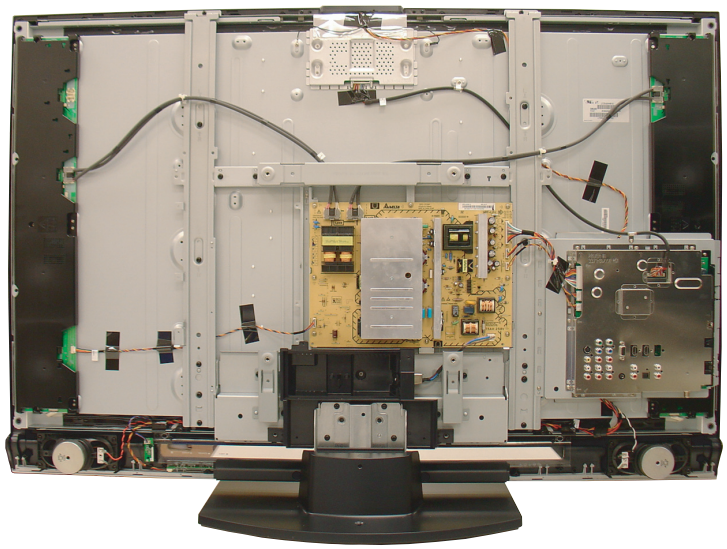
1-8. BOTTOM COVER, H2 BOARD, H3 BOARD, LED LENS AND IR LENS REMOVAL

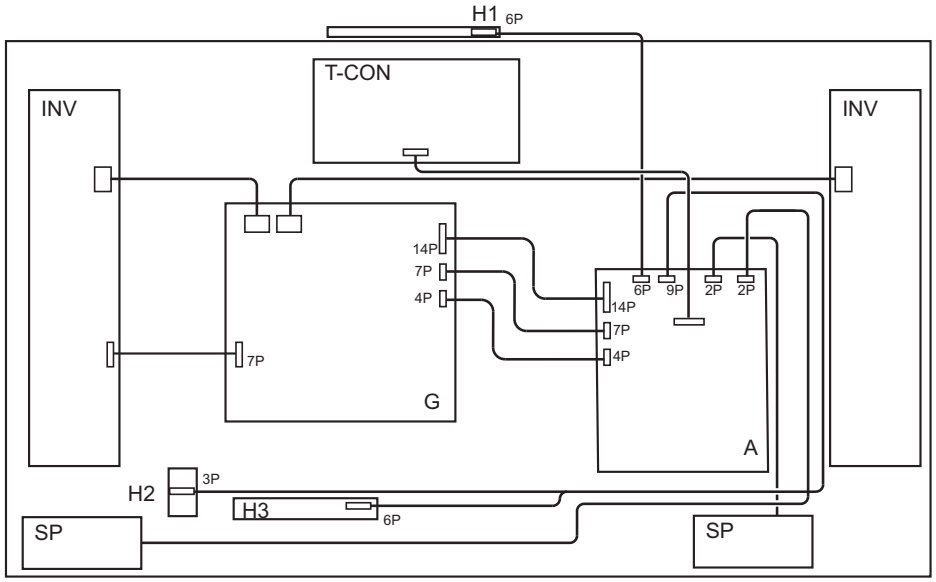
(1) Remove 2 screws
(2) Disconnect 1 connector and slide out H3 (LED) Board
(3) Disconnect 1 connector and remove 1 screw from H2 (IR) Board
(4) Remove 1 screw from IR Lens
(5) Remove 4 screws from LED Lens



WIRE DRESSING

OVERALL VIEW





SECTION 2: SERVICE ADJUSTMENTS

2-1. RESETTING TO FACTORY DEFAULTS AFTER BOARD REPLACEMENT

Traditional Service Mode is not available in this chassis. The only option for service technicians is to reset all of the settings to the Factory Default from the Self Diagnostic screen.

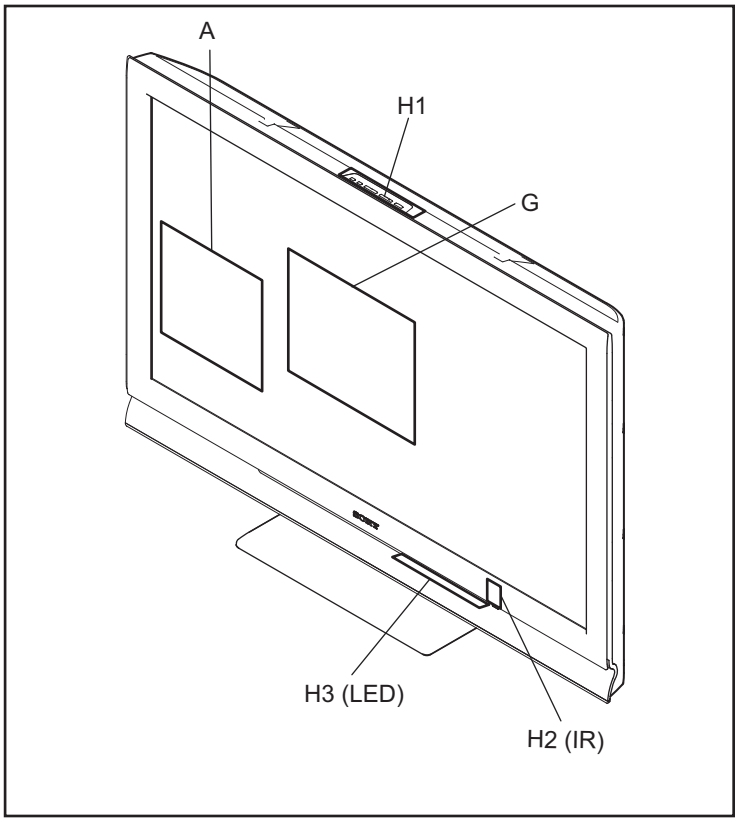
CAUTION: Resetting the TV to the Factory Defaults will *over-write all customer settings* including Parental Lock setting. Before performing this reset, contact the customer to determine what adjustments they have made.

1. Turn on the TV.
2. While holding down the ▲ button on the remote control, press the **POWER** button on the TV.
   The Initial Setup screen displays.
3. Select the language for the TV, then press the ⊕ button on the remote control.
4. To start Auto Program, press the ⊕ button on the remote control to select **OK**.
   NOTE: Allow 30+ minutes for Auto Program to complete.
5. Using the customers information, reset their adjustments.

RM-YD025

SECTION 3: DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION



3-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS INFORMATION

All capacitors are in µF unless otherwise noted. pF : µµF 50WV or less are not indicated except for electrolytics and tantalums.

All electrolytics are in 50V unless otherwise specified.

All resistors are in ohms. kΩ=1000Ω, MΩ=1000kΩ

Indication of resistance, which does not have one for rating electrical power, is as follows: Pitch : 5mm
Rating electrical power : $^1/_4$ W

$^1/_4$ W in resistance, $^1/_{10}$ W and $^1/_{16}$ W in chip resistance.

: nonflammable resistor

: fusible resistor

△ : internal component

: panel designation and adjustment for repair

⊥ : earth ground

⏚ : earth-chassis

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

Readings are taken with a color-bar signal input.

Readings are taken with a 10MΩ digital multimeter.

Voltages are DC with respect to ground unless otherwise noted.

Voltage variations may be noted due to normal production tolerances.

All voltages are in V.

S : Measurement impossibility.

: B+line.

: B-line. (Actual measured value may be different).

: signal path. (RF)

Circled numbers are waveform references.

The components identified by shading and ⚠ symbol are critical for safety. Replace only with part number specified.

The symbol indicates a fast operating fuse and is displayed on the component side of the board. Replace only with fuse of the same rating as marked.

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

Le symbole indique une fusible a action rapide. Doit etre remplace par une fusible de meme yaleur, comme maque.

NOTE: The components identified by a red outline and a mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

REFERENCE INFORMATION

RESISTOR

: RN	METAL FILM
: RC	SOLID
: FPRD	NONFLAMMABLE CARBON
: FUSE	NONFLAMMABLE FUSIBLE
: RW	NONFLAMMABLE WIREWOUND
: RS	NONFLAMMABLE METAL OXIDE
: RB	NONFLAMMABLE CEMENT
: ※	ADJUSTMENT RESISTOR

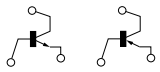
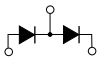
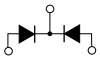
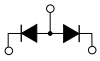
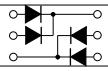
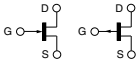
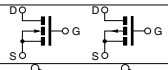
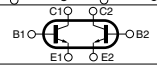
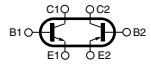
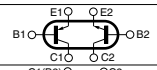
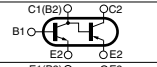
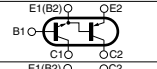
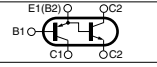
CAPACITOR

: TA	TANTALUM
: PS	STYROL
: PP	POLYPROPYLENE
: PT	MYLAR
: MPS	METALIZED POLYESTER
: MPP	METALIZED POLYPROPYLENE
: ALB	BIPOLAR
: ALT	HIGH TEMPERATURE
: ALR	HIGH RIPPLE

COIL

: LF-8L MICRO INDUCTOR

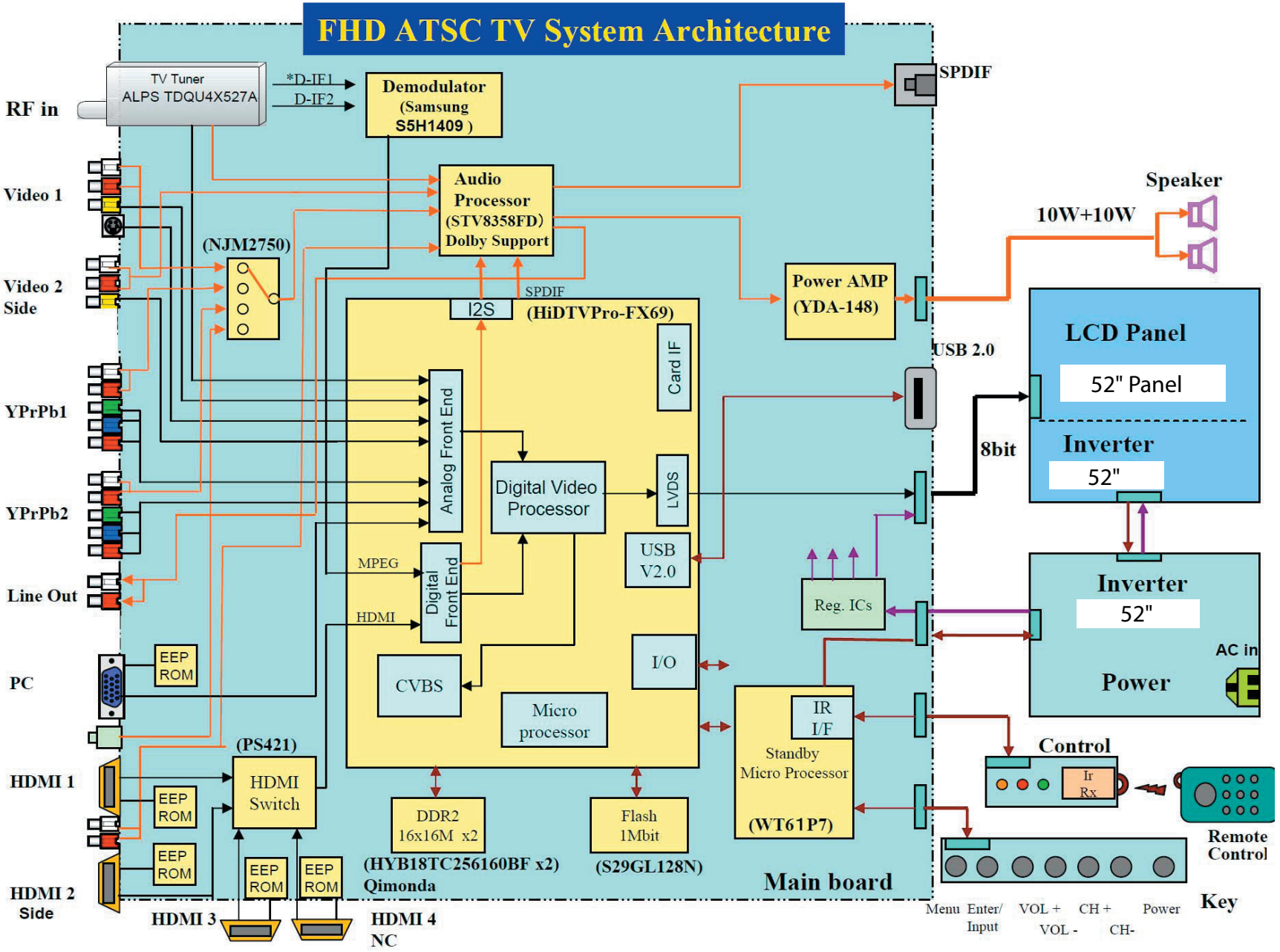
Terminal name of semiconductors in silk screen printed circuit (※)

	Device	Printed symbol	Terminal name	Circuit
1	Transistor		Collector Base Emitter	
2	Transistor		Collector Base Emitter	
3	Diode		Cathode Anode	
4	Diode		Cathode Anode (NC)	
5	Diode		Cathode Anode (NC)	
6	Diode		Common Anode Cathode	
7	Diode		Common Anode Cathode	
8	Diode		Common Anode Anode	
9	Diode		Common Anode Anode	
0	Diode		Common Cathode Cathode	
!¡	Diode		Common Cathode Cathode	
!™	Diode		Anode Cathode Anode Anode Cathode Anode	
!£	Transistor (FET)		Drain Source Gate	
!¢	Transistor (FET)		Drain Source Gate	
!?	Transistor (FET)		□ Source □ Drain □ Gate	
!§	Transistor		□ Emitter □ Collector □ Base	
!¶	Transistor		C2 B1 E1 E2 B2 C1	
!•	Transistor		C1 B2 E2 E1 B1 C2	
!ª	Transistor		C1 B2 E2 E1 B1 C2	
@º	Transistor		C1 B2 E2 E1 B1 C2	
@¡	Transistor		E2 B1 E1 C2 C1(B2)	
@™	Transistor		(B2) B1 E1 E2 C1 C2	
@£	Transistor		(B2) E2 E1 B1 C2 C1	
–	Discrete semiconductot			

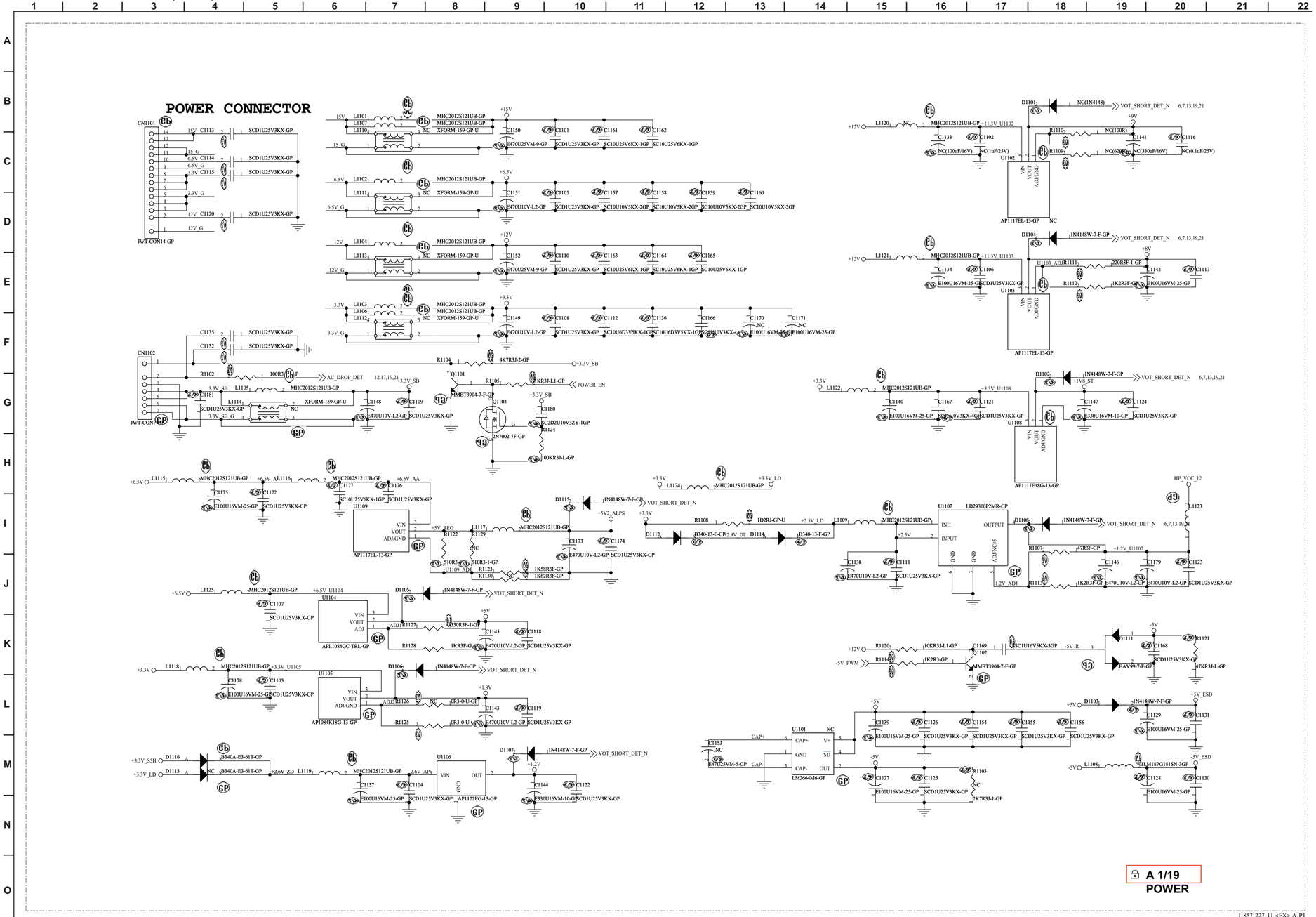
(Chip semiconductors that are not actually used are included.)

Ver.1.6

3-3. BLOCK DIAGRAM



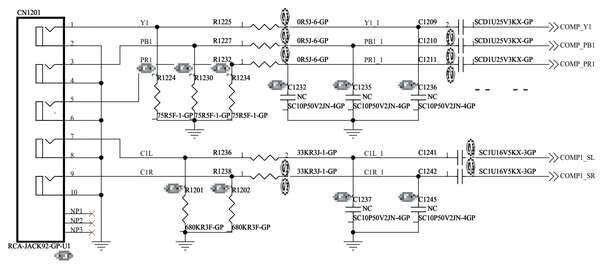
3-4. SCHEMATICS AND SUPPORTING INFORMATION
A BOARD SCHEMATIC DIAGRAM (1 OF 19)

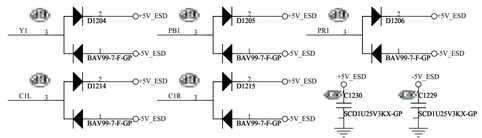


1-857-227-11 <FX> A-P1

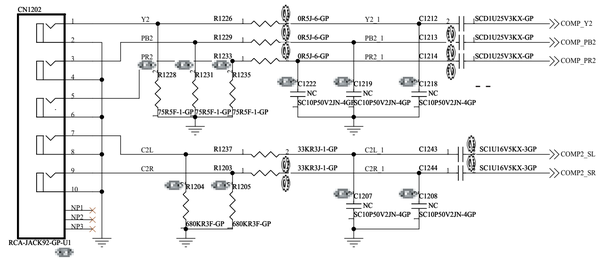
A BOARD SCHEMATIC DIAGRAM (2 OF 19)

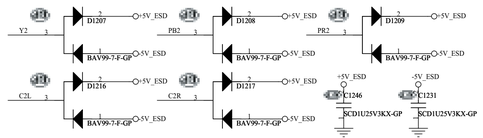
COMPONENT 1 I/P



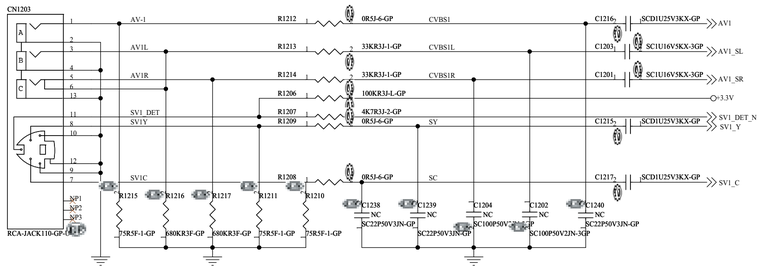


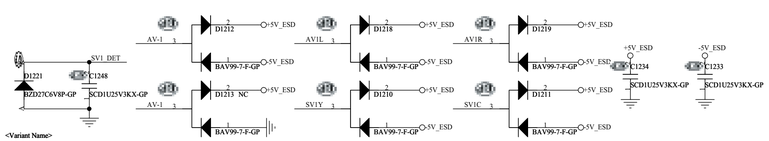
COMPONENT 2 I/P



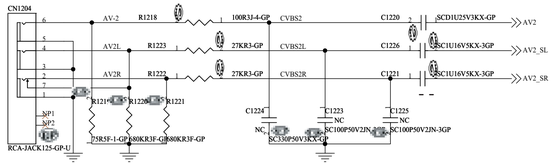


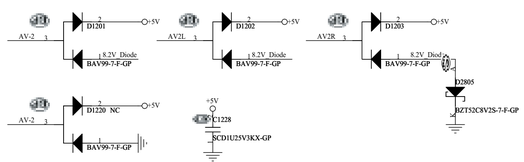
AV1/S-VIDEO1





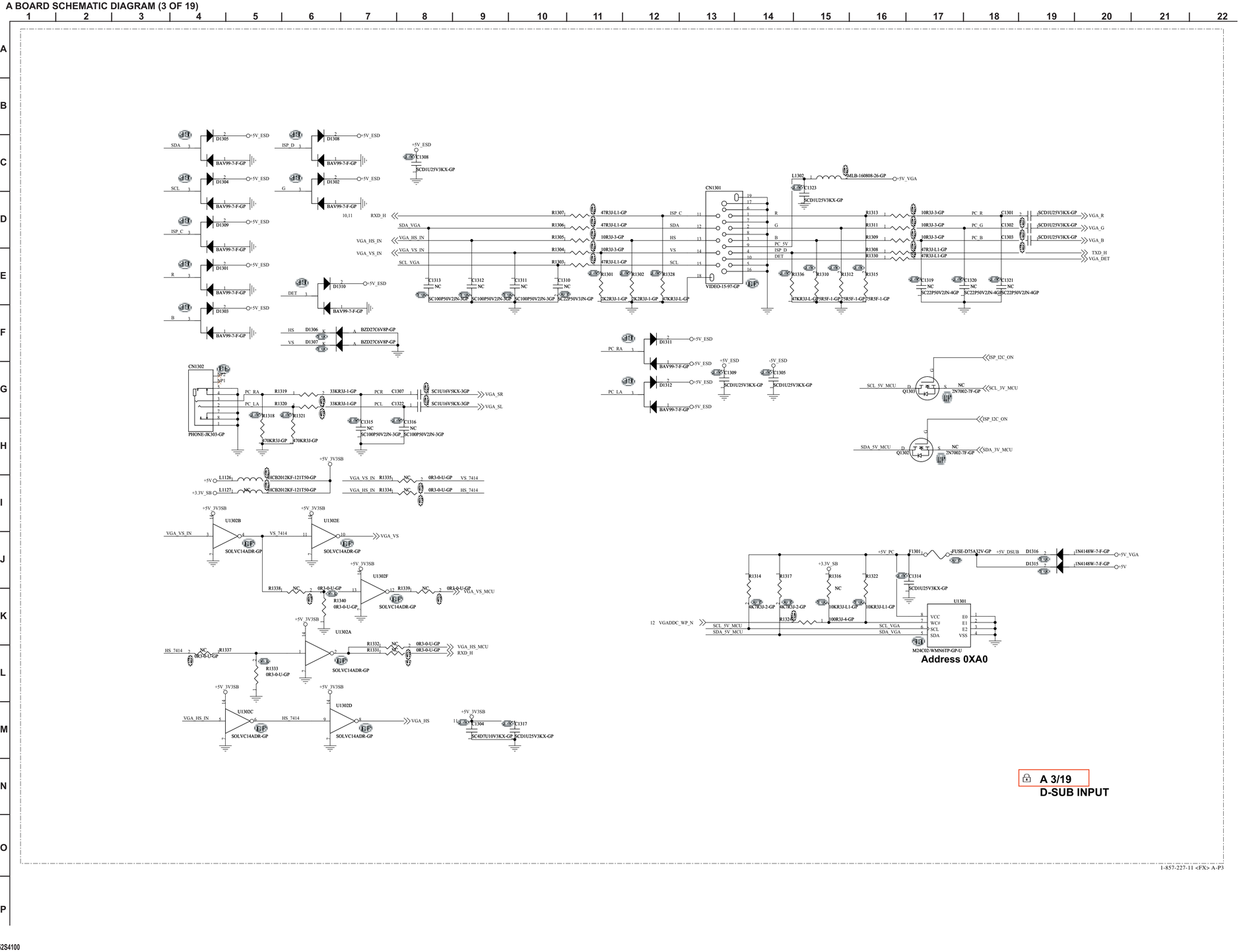
SIDE AV INPUT





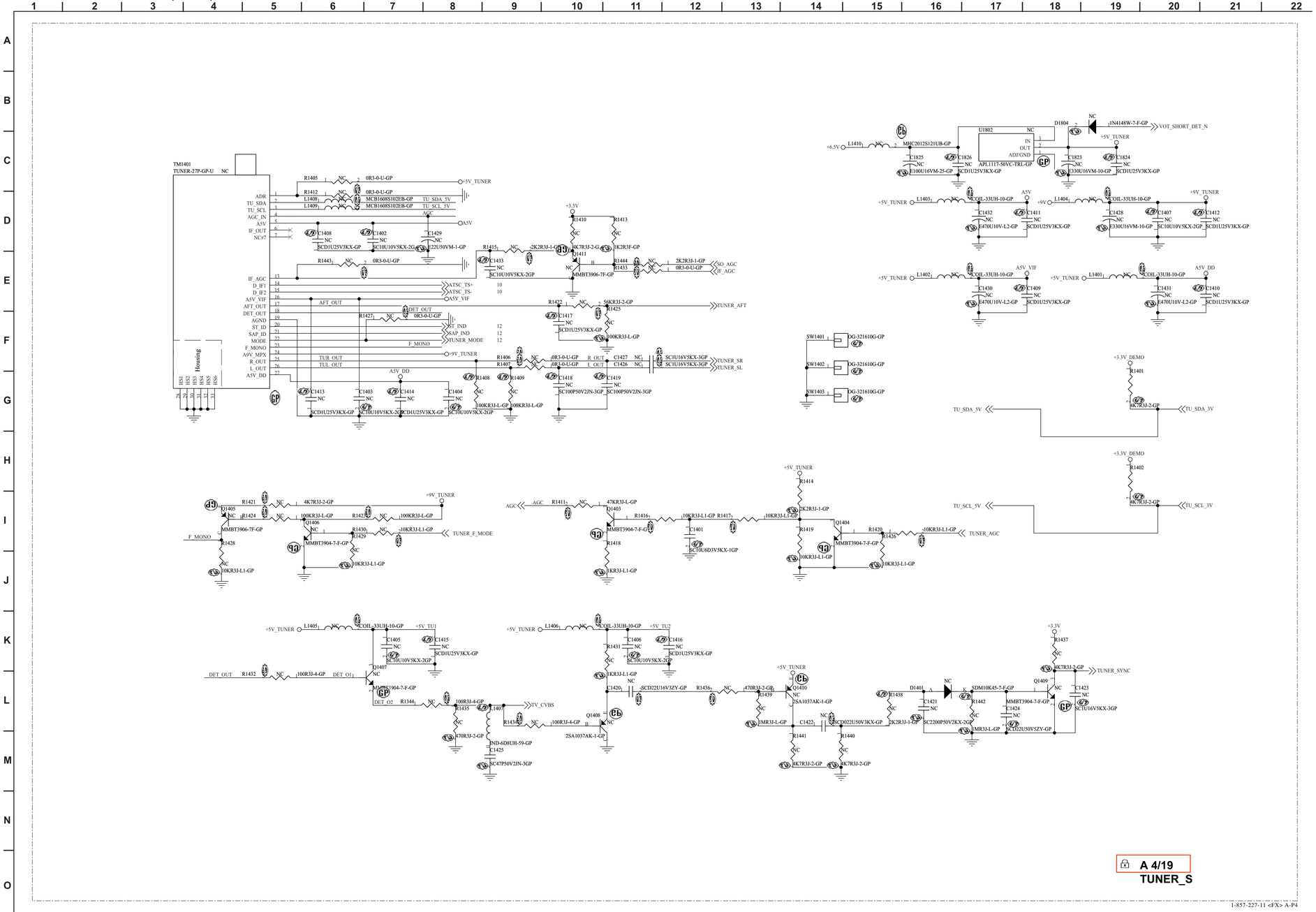
A 2/19
ANALOG INPUT

A BOARD SCHEMATIC DIAGRAM (3 OF 19)



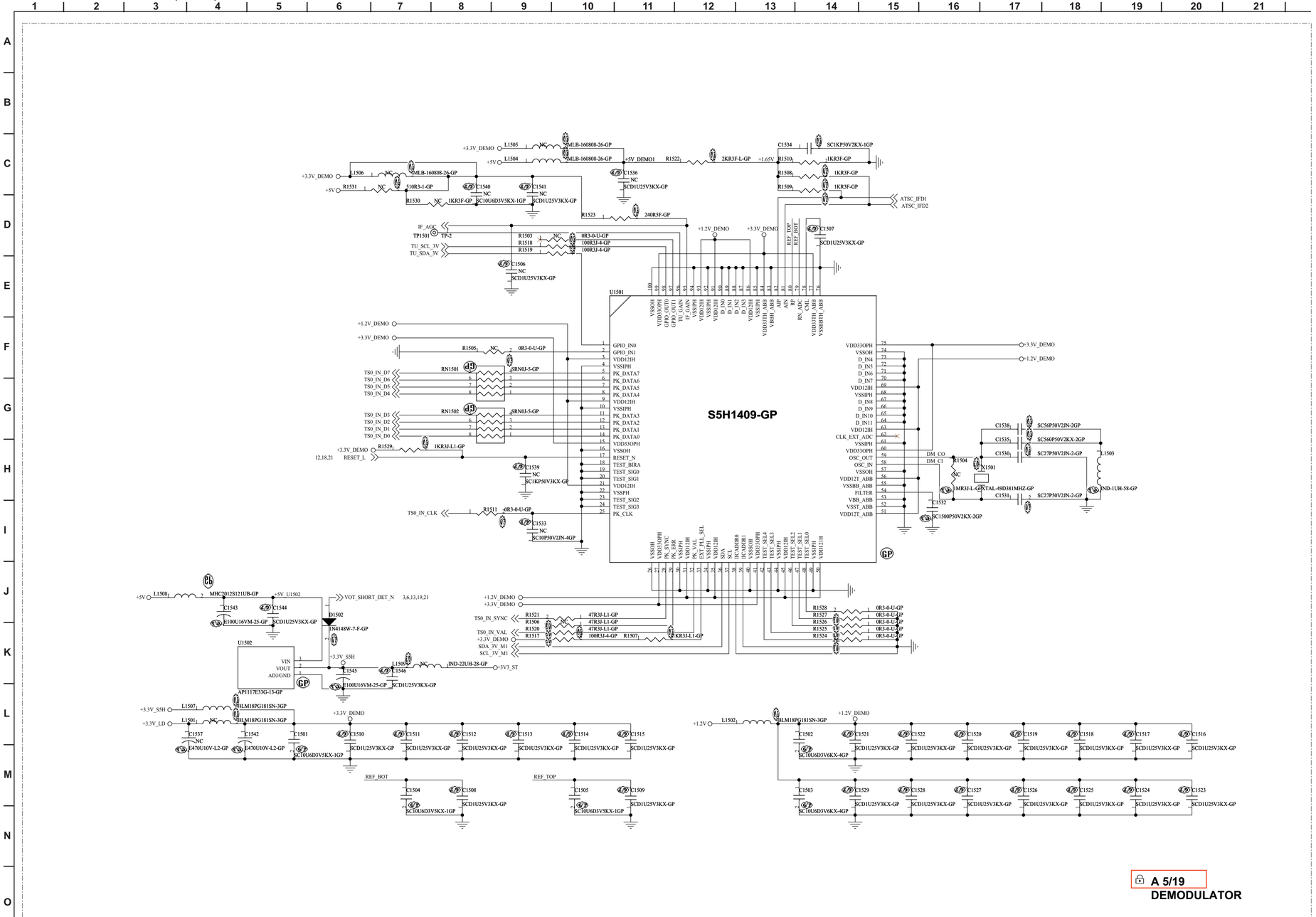
A 3/19
D-SUB INPUT

A BOARD SCHEMATIC DIAGRAM (4 OF 19)



A 4/19
TUNER_S

A BOARD SCHEMATIC DIAGRAM (5 OF 19)



A BOARD SCHEMATIC DIAGRAM (6 OF 19)

HDMI1

HDMI2

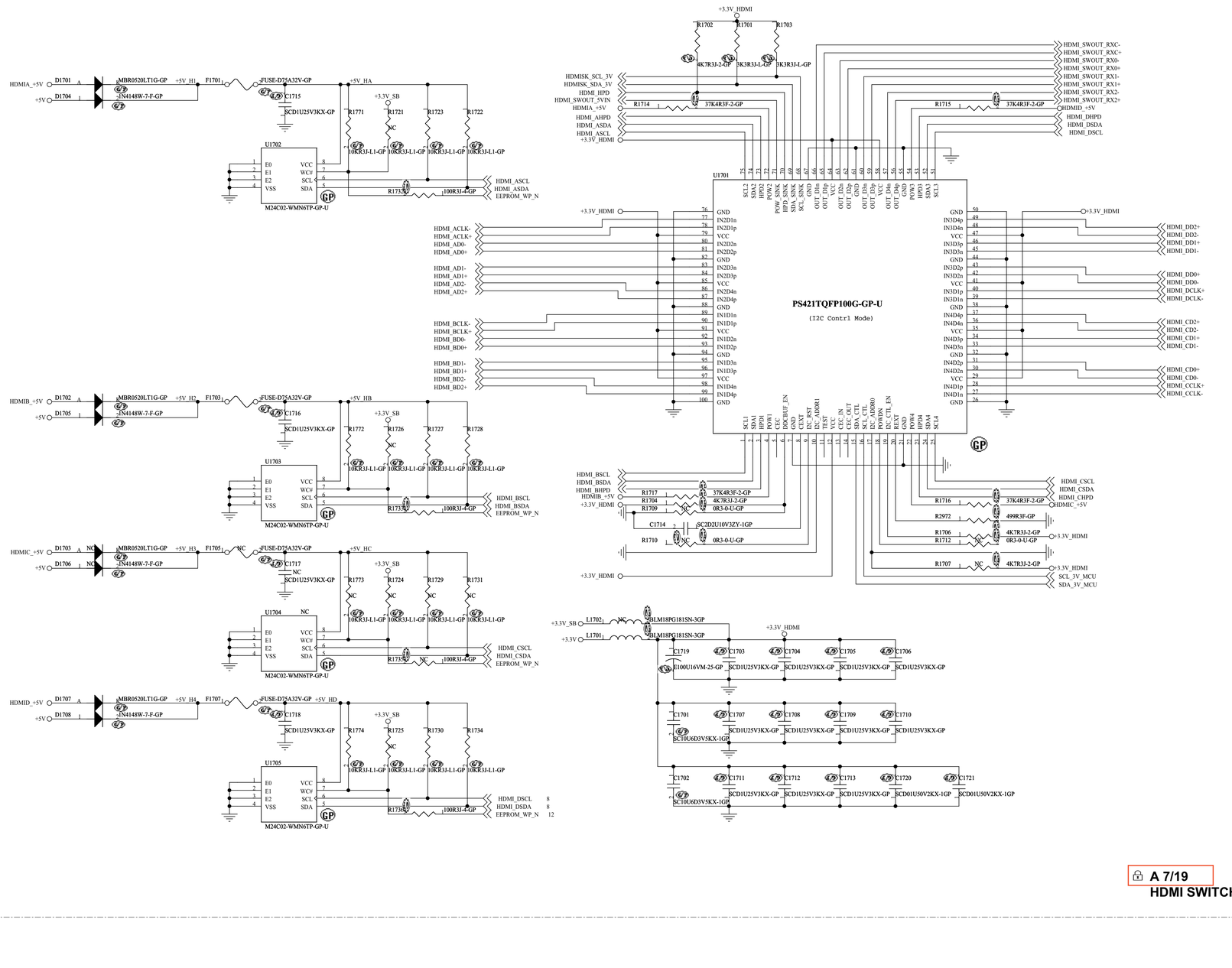
HDMI3

SIDE HDMI

20080623
Del Q1608,R1655

A 6/19
DEMODULATOR

A BOARD SCHEMATIC DIAGRAM (7 OF 19)

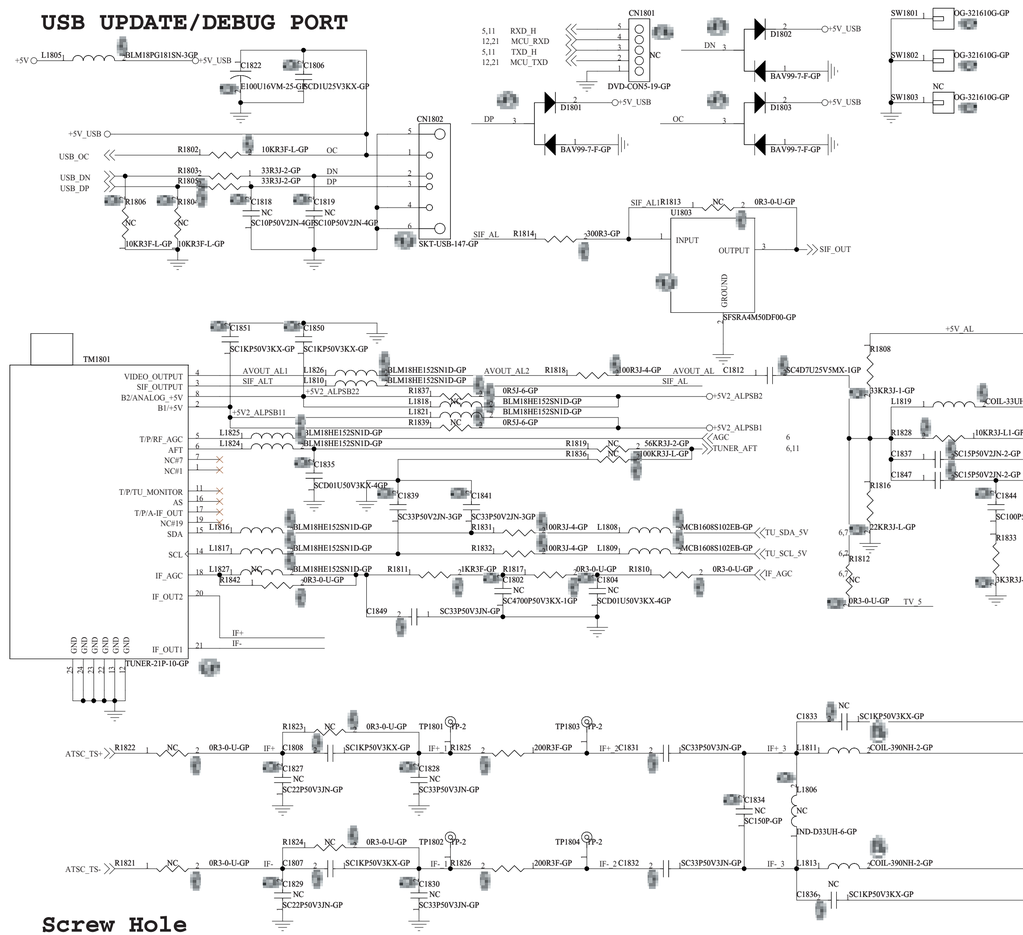


A 7/19
HDMI SWITCH

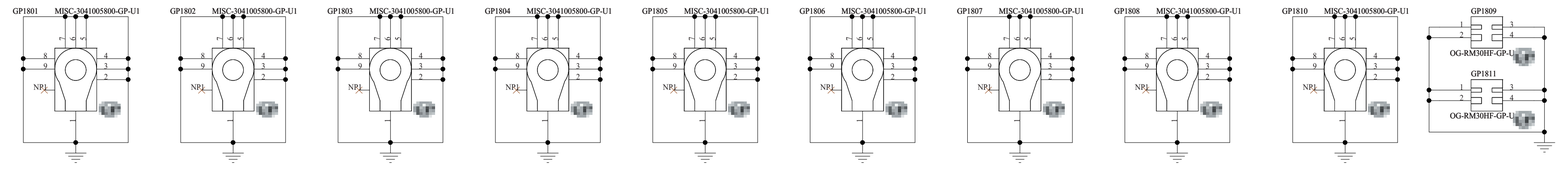
1-857-227-11 <FX> A-P7

A BOARD SCHEMATIC DIAGRAM (8 OF 19)

USB UPDATE/DEBUG PORT



Screw Hole



For LVDS

A 8/19
TUNER ALPS & USB

1-857-227-11 <FX> A-P8

A BOARD SCHEMATIC DIAGRAM (9 OF 19)

HiDTV-Pro_CX

(1/4)

TS_IN
HDMI_IN
ANALOG_IN
LVDS_OUT
I2S PORT
I2C PORT
UART PORT
USB PORT
ADC
MISC

9 HDMI_SWOUT_5VIN — R1939 10KR3J-L1-GP — PWR5V
R1940 10KR3J-L1-GP

U1901A — HIDTV-PRO-FX69-GP

TS0_IN_D0 C1 — TS1_D0
TS0_IN_D1 B1 — TS1_D1
TS0_IN_D2 A1 — TS1_D2
TS0_IN_D3 B2 — TS1_D3
TS0_IN_D4 A2 — TS1_D4
TS0_IN_D5 A3 — TS1_D5
TS0_IN_D6 B3 — TS1_D6
TS0_IN_D7 C3 — TS1_D7

TS0_IN_CLK D1 — TS1_CLK
TS0_IN_SYNC D2 — TS1_SYNC
TS0_IN_VAL C2 — TS1_DEN

HDMI_SWOUT_RX0- L2 — RX0-
HDMI_SWOUT_RX0+ L1 — RX0+
HDMI_SWOUT_RX1- M2 — RX1-
HDMI_SWOUT_RX1+ M1 — RX1+
HDMI_SWOUT_RX2- N2 — RX2-
HDMI_SWOUT_RX2+ N1 — RX2+
HDMI_SWOUT_RXC- K2 — RXC-
HDMI_SWOUT_RXC+ K1 — RXC+

PWR5V G1 — PWR5V
HDMISK_SDA_3V G3 — DSDA
HDMISK_SCL_3V G2 — DSCL

TV_CVBS — C1907 SCD1U25V3KX-GP — TP1913 TP-2 — V4 CVBS1, V4 CVBS_OUT1, V3 CVBS_OUT2

VGA_R R1 — PC_R
VGA_G T4 — PC_G
VGA_B N3 — PC_B
VGA_HS AF2 — PC_HS
VGA_VS AE2 — PC_VS

COMP_Y1 U2 — Y_G1
COMP_PB1 P3 — PB_B1
COMP_PR1 T1 — PR_R1

COMP_Y2 U1 — Y_G2
COMP_PB2 P2 — PB_B2
COMP_PR2 R3 — PR_R2

SV1_Y T3 — Y_G3
AV1 P1 — PB_B3
AV2 R2 — PR_R3

SV1_C P4 — C

V2 FS1, U3 FB1, V2 FS2, V1 FB2

+3.3V — R1106 4K7R3J-2-GP — IR_EN (21) R1933 — IR_DET (21) Q1902 2N7002-7F-GP — 1KR3J-L1-GP — IR_DET_CX — J4 CRX0

R1910 28KR3F-GP — T2 REXT

HP_VCOTP — AE10 VCOTP
HP_CLK27 — AF10 CLK27M

C1901 NC SC12P50V3JN-GP — X1901 NC — XTLI_32K H3, XTLO_32K H4
C1902 NC SC12P50V3JN-GP — X-32D768KHZ-42GPU — XTLI_24M AF5, XTLO_24M AF4
C1903 SC20P50V2JN-1GP — X1902 — R1924 MR3J-L-GP
C1904 SC20P50V2JN-1GP — XTAL-24MHZ-8GP

RESET_CX/FX — R1944 NC 0R3-0-U-GP — AF12 RESET
VCCH_RST — J1 VCCHRST
R1931 NC 0R3-0-U-GP — AC1 MUTE
TP1904 TP-2 — C1905 NC SC1KP50V3KX-GP — C1906 NC SC1KP50V3KX-GP — L3 ANTSTO

TXD C5 — TXD_H — TP1905
RTS/POD_A5 B4 — TP1906
DTR/POD_A6 C4 — RXD_H — TP1907
RXD D3 — TP1908
CTS/POD_A7 A4 — TP1909
DSR/POD_A8 A5 — TP1910
DCD/POD_A9 D4
RI/POD_CE1 B5

SCKIN/POD_ITX E2
SCK E4 — SCK — L1903 BLM18HE152SN1D-GP — I2S_SCK
WS E5 — WS — L1904 BLM18HE152SN1D-GP — I2S_WS
WSI2S/POD_CTX E3
SDI2S/POD_QTX E4
I2SCLK K3 — R1905 NC 0R3-0-U-GP — I2S_CLK
SDI F3 — I2S_D1
SD2 F2 — I2S_D2
SD3/POD_ETX F1 — I2S_D3
SPDIF F1 — SPDIF_CX

SCLMAST1 C11 — R1937 4K7R3J-2-GP — +3.3V — SCL_3V_M1
SDAMAST1 B11 — R1938 4K7R3J-2-GP — +3.3V — SDA_3V_M1
SCLMAST2 AD1 — R1935 4K7R3J-2-GP — +3.3V — SCL_3V_M2
SDAMAST2 AD2 — R1936 4K7R3J-2-GP — +3.3V — SDA_3V_M2

DP AA2 — USB_DP
DN AA1 — USB_DN
USB_PPON AC4
USB_OC AC3 — USB_OC

TESTCON AB5
TESTMOD AB4

VIN1 W1 — L1902 BLM18HE152SN1D-GP — TUNER_AFT
VIN2 W2

RREFEXT AA4 — R1922 6K04R3F-GP
FULL_EJTAG AE12 — R1926 10KR3J-L1-GP — +3.3V
PWRBT J2 — R1925 NC 10KR3J-L1-GP — TP-2 — TP1914
PWRON J3
MASTSEL AF11 — R1923 4K7R3J-2-GP
WDOG H1 — TP-2 — TP1917

TUNER_AFT — +3.3V — R1911 NC, R1912 NC, R1913 NC, R1914 NC — 4K7R3J-2-GP — R1918 NC 0R3-0-U-GP — R1915 0R3-0-U-GP

CPL_TXA0- AC26
CPL_TXA0+ AC25
CPL_TXA1- AD26
CPL_TXA1+ AD25
CPL_TXA2- AE26
CPL_TXA2+ AE25
CPL_TXA3- AF24
CPL_TXA3+ AE24
TP1915 AF23
TP1916 AE23
CPL_TXAC- AF26
CPL_TXAC+ AE25

CPL_TXB0- AF22
CPL_TXB0+ AE22
CPL_TXB1- AF21
CPL_TXB1+ AE21
CPL_TXB2- AF20
CPL_TXB2+ AE20
CPL_TXB3- AF18
CPL_TXB3+ AE18
TP1911 AF17
TP1912 AE17
CPL_TXBC- AF19
CPL_TXBC+ AE19

A 9/19
HIDTV PRO

A BOARD SCHEMATIC DIAGRAM (10 OF 19)

HiDTV-Pro_CX

(2/4)

DDR2 INTERFACE
FLASH INTERFACE
GPIO PORT

U1901B — HIDTV-PRO-FX69-GP

FRD_0 D14 FRD0/POD_D0
FRD_1 D13 FRD1/POD_D1
FRD_2 C13 FRD2/POD_D2
FRD_3 E16 FRD3/POD_D3
FRD_4 E15 FRD4/POD_D4
FRD_5 B14 FRD5/POD_D5
FRD_6 A14 FRD6/POD_D6
FRD_7 C14 FRD7/POD_D7
FRD_8 C16 FRD8/POD_A0
FRD_9 B16 FRD9/POD_A1
FRD_10 D15 FRD10/POD_A2
FRD_11 C15 FRD11/POD_A3
FRD_12 A15 FRD12/POD_A10
FRD_13 B15 FRD13/POD_A11
FRD_14 E14 FRD14/POD_A12
FRD_15 E13 FRD15/POD_A13

FRA_0 D16 FRA0/POD_OE
FRA_1 B17 FRA1/POD_WE
FRA_2 C17 FRA2/POD_IORD
FRA_3 E17 FRA3/POD_IOWR
FRA_4 D17 FRA4/POD_REG
FRA_5 A19 FRA5
FRA_6 B19 FRA6
FRA_7 B21 FRA7
FRA_8 C21 FRA8
FRA_9 A16 FRA9
FRA_10 A17 FRA10
FRA_11 C18 FRA11
FRA_12 D18 FRA12
FRA_13 B18 FRA13
FRA_14 A18 FRA14
FRA_15 C20 FRA15
FRA_16 C19 FRA16
FRA_17 B20 FRA17
FRA_18 A20 FRA18
FRA_19 A21 FRA19
FRA_20 C12 FRA20
FRA_21 B12 FRA21
FRA_22 A12 FRA22
FRA_23 A13 FRA23
R2020 NC 0R3-0-U-GP FRA_24 B13 FRA24

FOE_N D11 FOE#
FWE_N E11 FWE#

ROM_CE_N E12 BOOTCS
FLASH_CE_N D12 GCS0

GP0 D5 GP0/VDB_G0/TS2_D0
GP1 E5 GP1/VDB_G1/TS2_D1
GP2 E6 GP2/VDB_G2/TS2_D2
GP3 D6 GP3/VDB_G3/TS2_D3
C6 GP4/VDB_G4/TS2_D4
B6 GP5/VDB_G5/TS2_D5
A6 GP6/VDB_G6/TS2_D6
A7 GP7/VDB_G7/TS2_D7
B7 GP8/VDB_B0/TS2_CLK
C7 GP9/VDB_B1/TS2_DEN
D7 GP10/VDB_B2/TS2_SYNC
E7 GP11/VDB_B3/TS_S_CLK
E8 GP12/VDB_B4/TS_S_D0
D8 GP13/VDB_B5/TS_S_DEN
C8 GP14/VDB_B6/TS_S_SYNC
B8 GP15/VDB_B7/POD_CE2
A8 GP16/VDB_R0/POD_CRX
A9 GP17/VDB_R1/POD_DRX
B9 GP18/VDB_R2/POD_IREQ
D9 GP19/VDB_R3/POD_RESET
E9 GP20/VDB_R4/POD_WAIT
E10 GP21/VDB_R5/POD_VCC_EN
D10 GP22/VDB_R6/POD_VPP_EN
C10 GP23/VDB_R7/POD_OVERLOAD
B10 GP24/VDB_VS/POD_A4
A10 GP25/VDB_HS/POD_VS1
A11 GP26/VDB_CLK/POD_CD1
AC2 GP27
AE1 GP28
AF1 GP29

SO_AGC R2021 NC
HDMI4_DET R2022 100R3J-4-GP
R2023 100R3J-4-GP
R2005 100R3J-4-GP
HDMI_HPD R2008 100R3J-4-GP
HDMI1_DET R2006 100R3J-4-GP
HDMI2_DET R2007 100R3J-4-GP
HDMI3_DET R2025 NC
TUNER_F_MODE R2026 NC
SL_DET R2009 NC
ST_IND
SAP_IND
TUNER_MODE
A_SEL1 R2012 100R3J-4-GP
PANEL_EN
SV1_DET_N
Panel_ID0 R2033 100R3J-4-GP
VGA_DET D2001 1N4148W-7-F-GP
AC_DROP_DET
RESET_L R2014 0R3-0-U-GP
Panel_ID1 R2001 100R3J-4-GP
Panel_ID2
A_SEL0
TUNER_AGC R2011 100R3J-4-GP
DYNAMIC_PWM R2015 0R3-0-U-GP
MCU_RXD R2016 0R3-0-U-GP
MCU_TXD
+3.3V R2030 4K7R3J-2-GP
R2019 4K7R3J-2-GP
R2031 4K7R3J-2-GP
R2032 4K7R3J-2-GP
R2002 10KR3J-L1-GP

HP_MD[0..31]
MD0 AA23 HP_MD0
MD1 AA24 HP_MD1
MD2 Y23 HP_MD2
MD3 Y24 HP_MD3
MD4 T23 HP_MD4
MD5 T24 HP_MD5
MD6 R23 HP_MD6
MD7 R24 HP_MD7
MD8 AA25 HP_MD8
MD9 AA26 HP_MD9
MD10 Y25 HP_MD10
MD11 Y26 HP_MD11
MD12 U25 HP_MD12
MD13 U26 HP_MD13
MD14 T25 HP_MD14
MD15 T26 HP_MD15
MD16 G25 HP_MD16
MD17 G26 HP_MD17
MD18 F25 HP_MD18
MD19 F26 HP_MD19
MD20 C25 HP_MD20
MD21 C26 HP_MD21
MD22 B25 HP_MD22
MD23 B26 HP_MD23
MD24 G23 HP_MD24
MD25 G24 HP_MD25
MD26 F23 HP_MD26
MD27 F24 HP_MD27
MD28 B24 HP_MD28
MD29 A23 HP_MD29
MD30 A24 HP_MD30
MD31 A25 HP_MD31

HP_DQS_N[0..3]
DQS0 W23 HP_DQS_N0
DQS0# V23 HP_DQS1
DQS1 V25 HP_DQS_N1
DQS1# V26 HP_DQS2
DQS2 D25 HP_DQS_N2
DQS2# D26 HP_DQS3
DQS3 E23 HP_DQS_N3
DQS3# D23

HP_DQS[0..3]
HP_DQM[0..3]
DQM0 W24 HP_DQM0
DQM1 W25 HP_DQM1
DQM2 E25 HP_DQM2
DQM3 E24 HP_DQM3

HP_MA[0..12]
MAA0 K25 HP_MA0
MAA1 N24 HP_MA1
MAA2 K26 HP_MA2
MAA3 N26 HP_MA3
MAA4 J25 HP_MA4
MAA5 M23 HP_MA5
MAA6 J26 HP_MA6
MAA7 N23 HP_MA7
MAA8 H25 HP_MA8
MAA9 L23 HP_MA9
MAA10 N25 HP_MA10
MAA11 H26 HP_MA11
MAA12/CS1 H23 HP_MA12

HP_BA[0..1]
BA1 M26 HP_BA1
BA0 M25 HP_BA0

MCLK0 L25 HP_MCLK0
MCLK0# L26 HP_MCLK0_N

MVREF1 W22
MVREF2 A22 MVREF12

CAS K23 HP_CAS_N
RAS J23 HP_RAS_N
WE P25 HP_WE_N
CS0 L24 HP_CS0_N
CKE P26 HP_CKE
ODT J24 HP_ODT
DRVIMP C22
R2017 1KR3F-GP
R2018 1K01R3F-GP

HP_VDDM
R2010 1KR3F-GP
R2013 1KR3F-GP
C2001 SCD1U25V3KX-GP
C2002 SCD1U25V3KX-GP
C2003 SCD1U25V3KX-GP
C2004 SCD1U25V3KX-GP

JTAG
CN2001 DVD-CON5-19-GP
GP0 R2036 100R3J-4-GP
GP2 R2037 100R3J-4-GP
GP1 R2038 100R3J-4-GP
GP3 R2039 100R3J-4-GP
NC

POWER_EN R2004 4K7R3J-2-GP
VGADDC_WP_N Q2003 2N7002-7F-GP
R2034 NC 0R3-0-U-GP
POWER_EN R2003 4K7R3J-2-GP
EEPROM_WP_N Q2002 2N7002-7F-GP
R2035 NC 0R3-0-U-GP
+3.3V R1745 NC 10KR3J-L1-GP SL_DET
R1746 NC 10KR3J-L1-GP

A 10/19
HIDTV PRO (CONT.)

A BOARD SCHEMATIC DIAGRAM (11 OF 19)

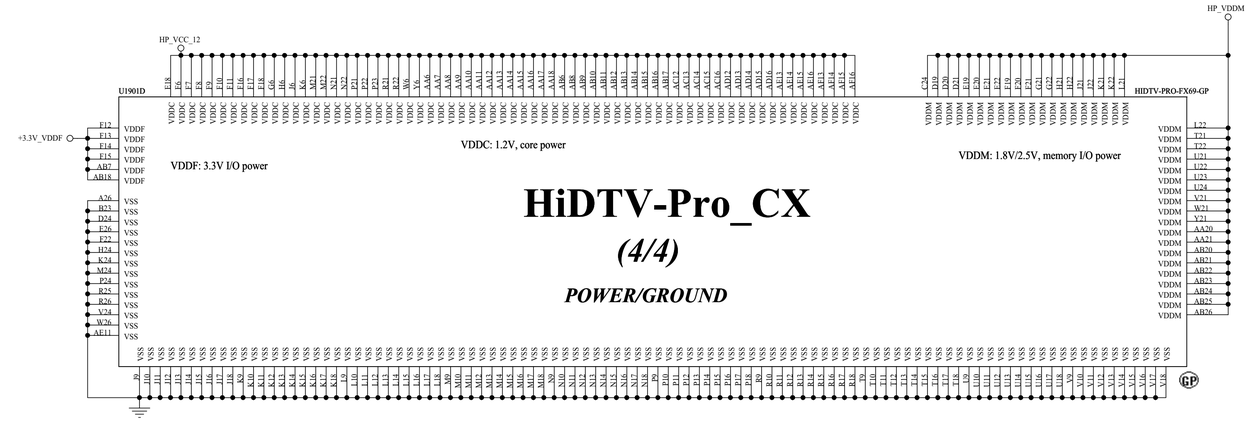
HiDTV-Pro_CX

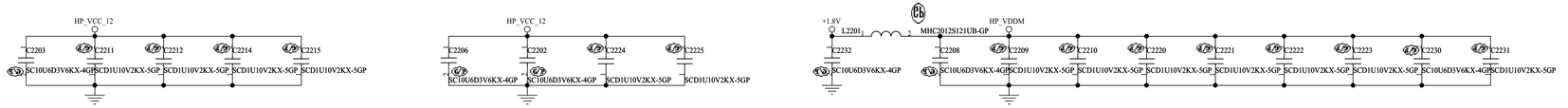
(3/4)

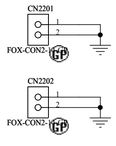
A 11/19
HIDTV PRO (CONT.)

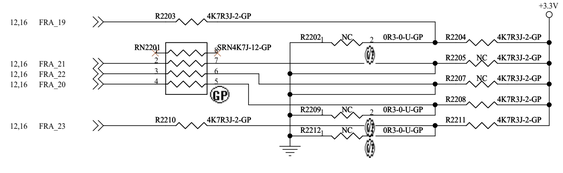
I-857-227-11 <FX> A-P11

HIDTV_PRO POWER





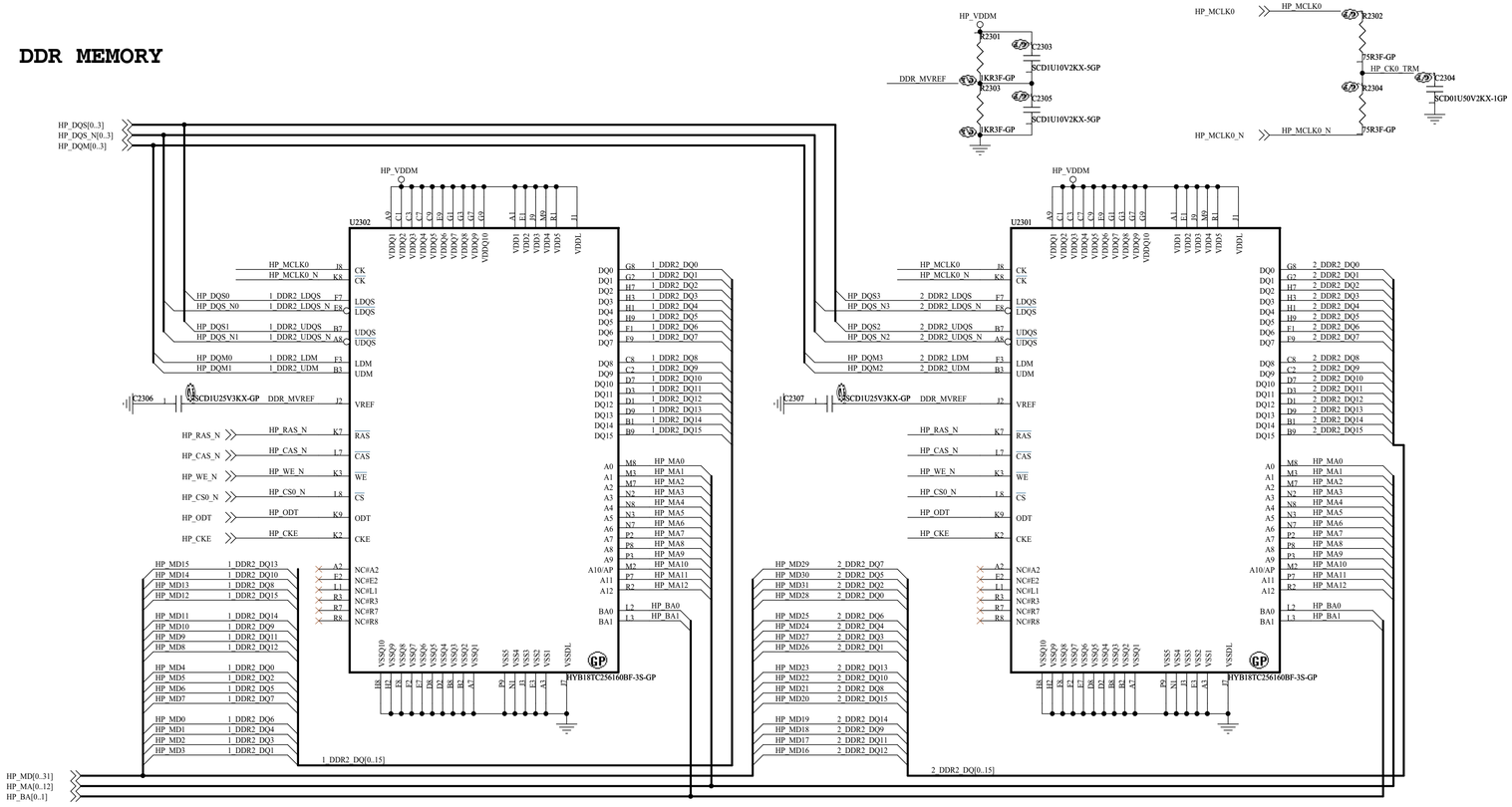


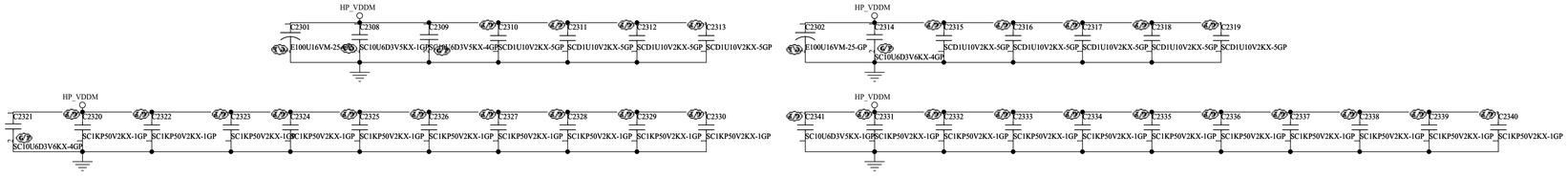


A 12/19
HIDTV PRO (CONT.)

A BOARD SCHEMATIC DIAGRAM (13 OF 19)

DDR MEMORY



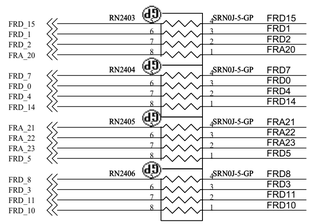


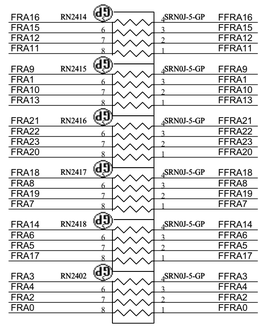
A 13/19
DDR

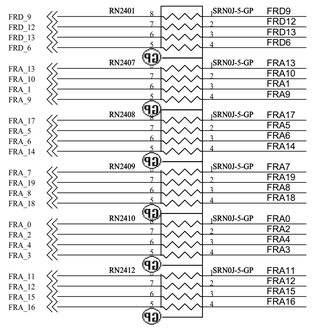
1-857-227-11 <FX> A-P13

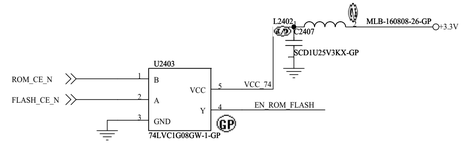
A BOARD SCHEMATIC DIAGRAM (14 OF 19)

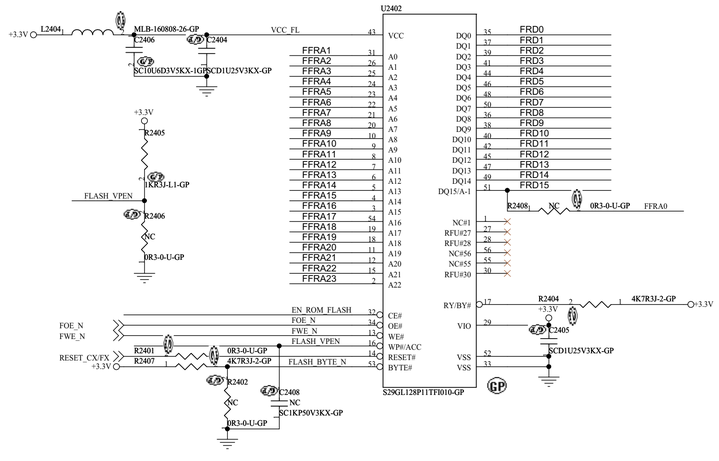
BOOT ROM & FLASH











A 14/19
BOOT ROM & FLASH

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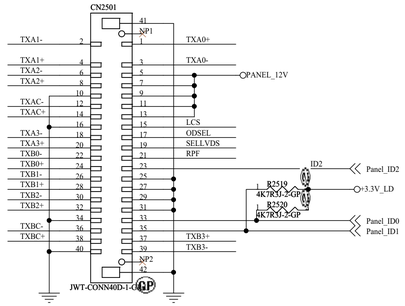
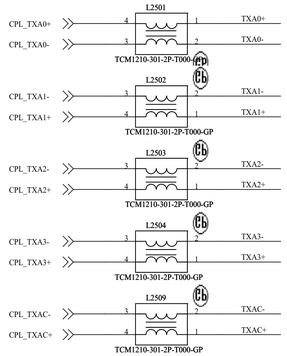
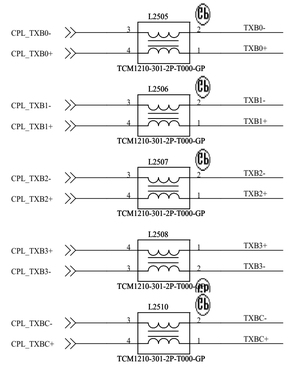
A BOARD SCHEMATIC DIAGRAM (15 OF 19)

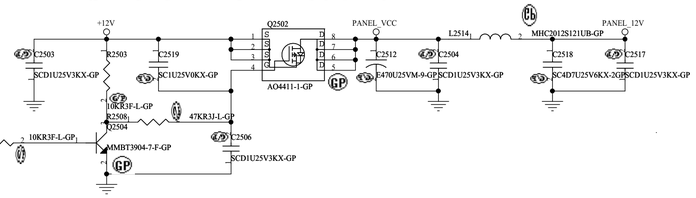
LVDS INTERFACE



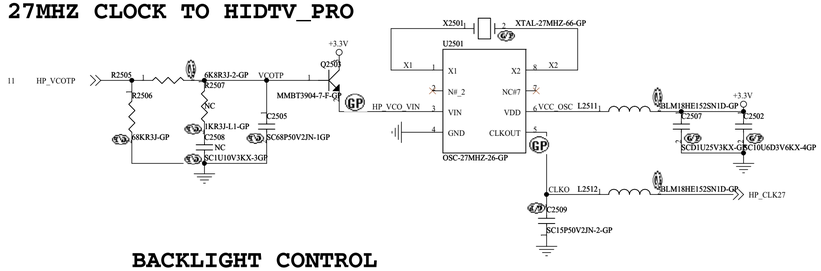




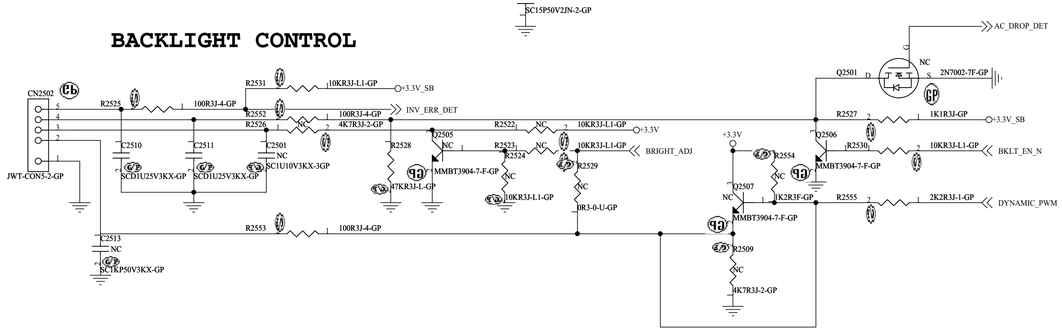
LVDS MODULE POWER CONTROL

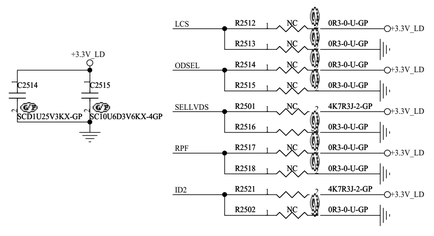


27MHZ CLOCK TO HIDTV_PRO



BACKLIGHT CONTROL





A 15/19
LVDS INTERFACE

1-857-227-11 <FX> A-P15

A BOARD SCHEMATIC DIAGRAM (16 OF 19)

AUDIO PROCESSOR

U2602 — STV8358FD-GP

SIF_P C2630 SCD022U50V3KX-GP — SIFP — C2631 SC180P50V2JN-1GP — L2602 BLM18HE152SN1D-GP — SIF_OUT
R2639 560R3J-1-GP

+1V8_ST_D, +3V3_ST_D, +1V8_ST_ADC, +1V8_ST_PLL, +3V3_ST_A, +8V, +1V8_ST_ADJ

C2602 SC10U6D3V6KX-4GP
C2603 SCD1U16V3KX-3GP
C2601 SC10U6D3V6KX-4GP
C2604 SCD1U16V3KX-3GP

SC1_L — L2604 IND-10UH-169-GP — AMP_L
SC1_R — L2605 IND-10UH-169-GP — AMP_R

20080520
R2629,R2635,R2602

OUTA_L R2981 0R3-0-U-GP — OUTA_L1 C2637 SC1U16V5KX-3GP — AUDIO_SL1
OUTB_R R2982 0R3-0-U-GP — OUTB_R1 C2636 SC1U16V5KX-3GP — AUDIO_SR1

TUNER_SL
TUNER_SR
AV2_SL
AV2_SR
HDMIA_SL
HDMIA_SR

SC1_IN_L
SC1_IN_R
SC2_IN_L
SC2_IN_R
SC3_IN_L
SC3_IN_R
SC4_IN_L
SC4_IN_R
SC5_IN_L
SC5_IN_R

I2SA_DATA, I2SD_DATA, I2SO_DATA1, I2SO_DATAO
I2S_DATA0, I2S_DATA1, I2S_DATA2, I2S_DATA3
I2SD1 L2617 BLM18HE152SN1D-GP — I2S_D1
I2SD2 R2610 0R3-0-U-GP — I2S_D2
I2SD3 R2611 0R3-0-U-GP — I2S_D3

20080529

I2SA_SCLK, I2S_PCM_CLK, I2S_SCLK, I2S_LR_CLK, I2SA_LR_CLK, I2SO_LR_CLK, I2SO_SCLK
I2SSCLK R2628 0R3-0-U-GP — I2S_CLK
I2SSCK L2618 BLM18HE152SN1D-GP — I2S_SCK
I2SWS L2619 BLM18HE152SN1D-GP — I2S_WS

R2624 NC 0R3-0-U-GP — +3V3_ST

ADR_SEL, CLK_SEL, S/PDIF_BYPASS, S/PDIF_OUT, CK_TST_CTRL, MONO_IN, BUS_EXP, IRQ
+1V8_ST
SPDIF_CX
SPDIF_OUT — C2621 SCD1U25V3KX-GP

R2643 NC 10KR3J-L1-GP — +3V3_ST_D

SCL, SDA, RST#
SCL_3V_M2
SDA_3V_M2
R2636 NC 100R3J-4-GP — RESET_L

C2639 SC1KP50V3KX-GP — SIF_P
SIF_P, SIF_N, SIF2_P
C2624 SCD022U50V3KX-GP — C2625 SCD022U50V3KX-GP

R2613 NC 0R3-0-U-GP — SC1_OUT_L
R2615 NC 0R3-0-U-GP — SC1_OUT_R
R2616 33R3J-2-GP — SC2_L — SC2_OUT_L
R2618 33R3J-2-GP — SC2_R — SC2_OUT_R
R2620 NC 0R3-0-U-GP — SC3_OUT_L
R2622 NC 0R3-0-U-GP — SC3_OUT_R

20 AU_LOUT — C2623 SC100P50V2JN-3GP
20 AU_ROUT — C2638 SC100P50V2JN-3GP

C2640 SCD033U16V3KX-GP — SCL_FLT
C2641 SCD033U16V3KX-GP — SCR_FLT

R2631 NC 0R3-0-U-GP — HP_LSS_L, HP_LSS_R, HP_DET#

NC#21, NC#22, NC#24, NC#25, NC#33, NC#35, NC#37, NC#39, NC#41, NC#43, NC#44

XTALIN_CLKXTP, XTALOUT_CLKXTM
C2628 SC27P50V2JN-2-GP — CLKXTP
X2601 XTAL-27MHZ-66-GP
C2629 SC27P50V2JN-2-GP — CLKXTM

GND_SA, GND_PSUB, GNDPW_JF, GND_H, GND18_JF, GND33_LS, GND33_SC, GND18_CLK1, GND18_CLK2, VSS18_CONV, VSS33_CONV, VSS18_ADC, VSS33_IO1, VSS33_IO2, VSS18, VSS18, VSS18

L2606 FCM2012KF-301T06-GP
L2607 FCM2012KF-301T06-GP
L2608 FCM2012KF-301T06-GP
L2609 FCM2012KF-301T06-GP
L2610 FCM2012KF-301T06-GP
L2611 FCM2012KF-301T06-GP

STV8358 Digital GND

+1V8_ST — L2612 MHC2012S121UB-GP — +1V8_ST_PLL
C2611 SC10U6D3V6KX-4GP, C2615 SCD1U25V3KX-GP, C2617 SCD1U25V3KX-GP

L2613 MHC2012S121UB-GP — +1V8_ST_ADC
C2616 SC10U6D3V6KX-4GP, C2612 SCD1U25V3KX-GP, C2619 SCD1U25V3KX-GP, C2620 SCD1U25V3KX-GP

L2614 MHC2012S121UB-GP — +1V8_ST_D
C2643 SC10U6D3V6KX-4GP, C2613 SCD1U25V3KX-GP, C2614 SCD1U25V3KX-GP, C2618 SCD1U25V3KX-GP

+3.3V — L2601 HH-22UH-28-GP — +3V3_ST
C2622 E470U25VM-9-GP

L2616 MHC2012S121UB-GP — +3V3_ST_A
C2605 SC10U6D3V5KX-1GP, C2606 SCD1U25V3KX-GP, C2607 SCD1U25V3KX-GP, C2608 SCD1U25V3KX-GP

L2615 MHC2012S121UB-GP — +3V3_ST_D
C2642 SC10U6D3V6KX-4GP, C2609 SCD1U25V3KX-GP, C2610 SCD1U25V3KX-GP

AUDIO SWITCH

+8V — C2626 SCD1U25V3KX-GP, C2627 SC10U16V6KX-3GP

U2601 — NJM2750M-GP

V+
AV1_SL, AV1_SR — IN1A, IN1B
COMP1_SL, COMP1_SR — IN2A, IN2B
COMP2_SL, COMP2_SR — IN3A, IN3B
VGA_SL, VGA_SR — IN4A, IN4B
OUTA_L, OUTB_R — OUTA, OUTB
CNT1, CNT2
VREF
NC#10
GND

R2637 10KR3J-L1-GP — +8V
R2638 1KR3J-L1-GP — A_SEL0
Q2602 MMBT3904-7-F-GP

C2635 E100U16VM-25-GP

R2640 10KR3J-L1-GP — +8V
R2641 1KR3J-L1-GP — A_SEL1
Q2603 MMBT3904-7-F-GP

SPDIF OUT

SPDIF_OUT — C2632 SCD1U25V3KX-GP — R2642 220R3J-1-GP — C2633 NC SC22P50V3JN-GP

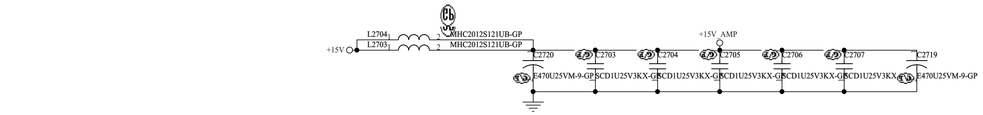
19 MUTE_N — R2644 10KR3J-L1-GP — G — Q2601 AO3413-GP — D — R2645 NC 120R3J-2-GP

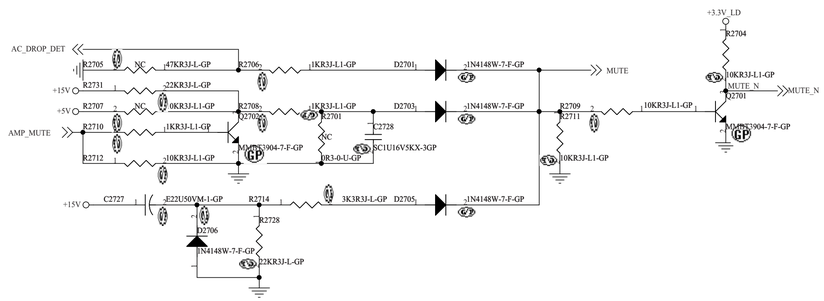
+3.3V — L2603 FCM2012KF-301T06-GP — +3.3V_SPDIF — C2634 SCD1U25V3KX-GP

CN2601 — SKT-OPTIC-2-GP

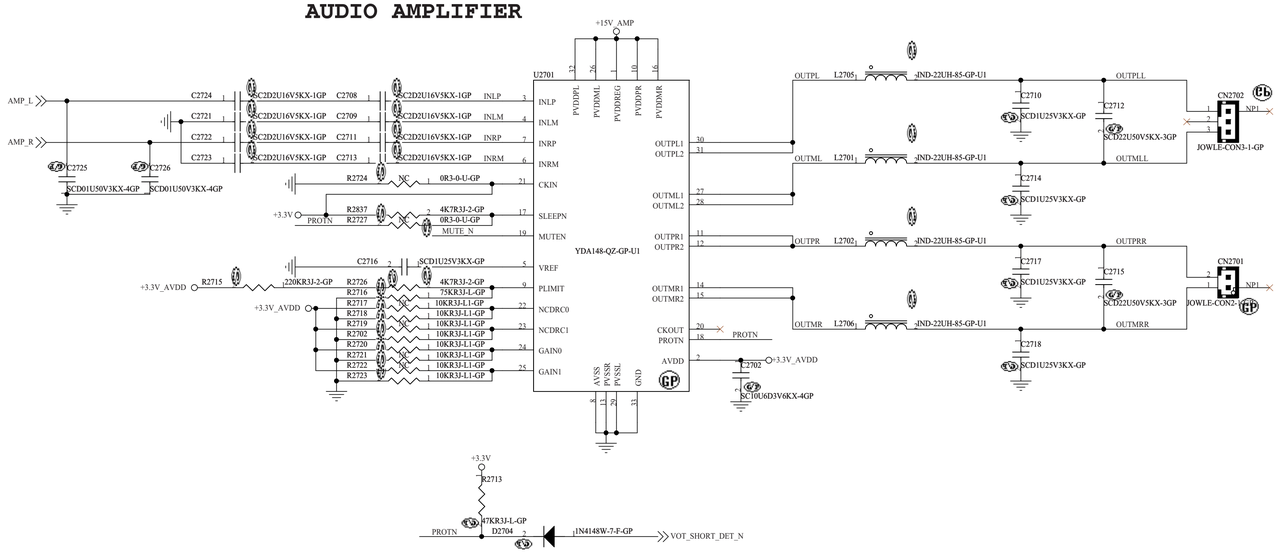
A 16/19
AUDIO PROCESSOR

A BOARD SCHEMATIC DIAGRAM (17 OF 19)





AUDIO AMPLIFIER

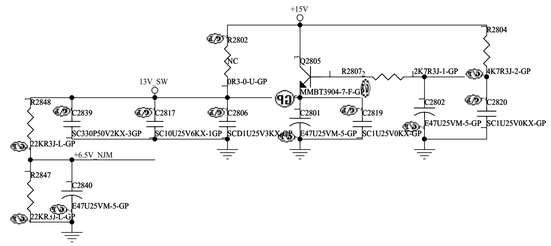


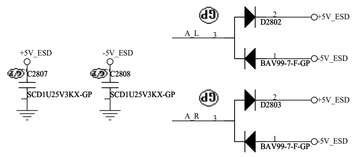
A 17/19
AUDIO AMP

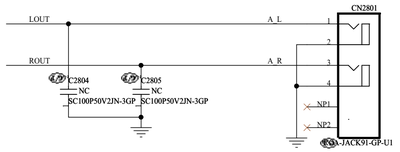
1-857-227-11 <FX> A-P17

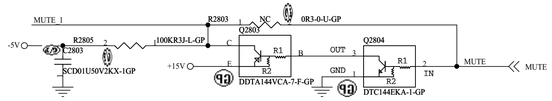
A BOARD SCHEMATIC DIAGRAM (18 OF 19)

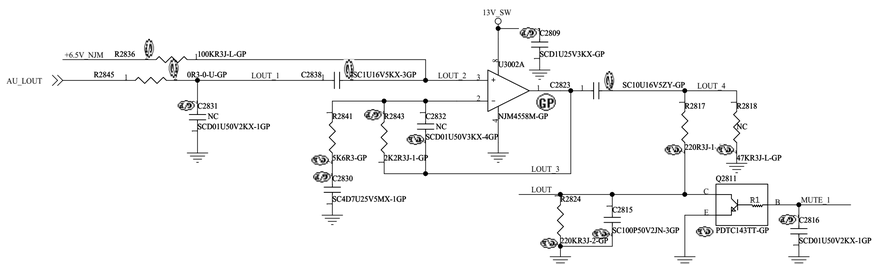
AUDIO OUTPUT STAGE & MUTE CONTROL

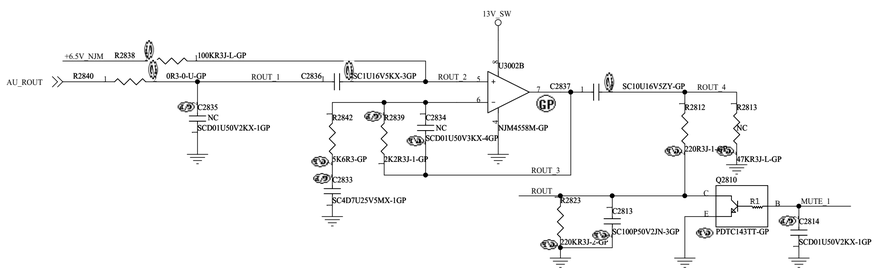












A 18/19
AUDIO OUT & MUTE

A BOARD SCHEMATIC DIAGRAM (19 OF 19)

KEYPAD

CN2902 JWT-CON6-4-GP
+3.3V_SB_KEY
L2902 MLB-160808-26-GP
R2924 100R3J-4-GP POWER_Key
R2926 100R3J-4-GP ADC_IN2
R2975 100R3J-4-GP ADC_IN1
C2904 C2905 C2906 C2907 C2908 SCD1U25V3KX-GP SCD1U25V3KX-GP SCD1U25V3KX-GP SC100D6D3V5KX-4GP SCD1U25V3KX-GP
R2908 10KR3J-L1-GP R2909 10KR3J-L1-GP
+3.3V_SB

+3.3V_SB
R2960 10KR3J-L1-GP
C2927 E100U16VM-25-GP
C2925 SCD1U25V3KX-GP
R2976 4K7R3J-2-GP
U2901 AT24C32CN-SH-T-GP
MCU_WP SCL_3V_MCU SDA_3V_MCU
VCC WP SCL SDA A0 A1 A2 GND
Address 0XA2

IR&LED

CN2903 JWT-CON9-GP
IR
+3.3V_SB_IR
L2901 FCM2012KF-301T06-GP
R2952 47R3J-L1-GP IR_DET
IR_DET
C2917 C2918 C2919 C2920 C2921 C2922 C2926
SCD1U25V3KX-GP SCD1U25V3KX-GP SCD1U25V3KX-GP SCD1U25V3KX-GP SCD1U25V3KX-GP SC100D6D3V5KX-1GP SC100P50V2JNX-3GP

R2936 68R3J-GP Q2902 MMBT3906-7F-GP +3.3V_SB
C2913 SC1U10V3KX-4GP
R2966 NC
R2942 4K7R3J-2-GP LED_GREEN_POWER
R2944 100R3J-4-GP Q2903 MMBT3906-7F-GP +3.3V_SB
C2914 SC1U10V3KX-4GP
R2967 NC
R2946 4K7R3J-2-GP LED_RED(STANDBY)
R2948 68R3J-GP Q2904 MMBT3906-7F-GP +3.3V_SB
C2940 SC1U10V3KX-4GP
R2973 NC
R2949 4K7R3J-2-GP LED_Amber(SLEEP)
R2950 68R3J-GP Q2905 MMBT3906-7F-GP +3.3V_SB
C2941 SC1U10V3KX-4GP
R2974 NC
R2951 4K7R3J-2-GP LED_Green(PIC-OFF)

+3.3V_SB L2903 MHC2012S121UB-GP +3.3V_MCU
C2903 SCD1U25V3KX-GP
C2923 E100U16VM-25-GP

U2903 61P7-RN440WT-GP
+3.3V_SB
R2902 R2903 R2904 NC 4K7R3J-2-GP
SDA_3V_MCU SCL_3V_MCU
R2910 R2912 R2914 100R3J-4-GP
SDA_ISP SCL_ISP
IR_EN VS_SDA_SEL
INV_ERR_DET RESET_CX/FX
R2918 R2919 100R3J-4-GP
RESET_N VOL_DROP_DET_N
VGA_DET
R2922 0R3-0-U-GP
DSDA1 DSCL1 GPIOA5/DSDA2 GPIOA4/DSCL2 GPIOA3/P03 GPIOA2/P02 GPIOA1/P01 GPIOA0/P00
GPIOB6/SSDA GPIOB5/SSCL GPIOB4/P05 GPIOB3/P04 GPIOB2/IR GPIOB1/IRQ3 GPIOB0/IRQ2
AMP_MUTE AC_DROP_DET IR_DET HDMI_CEC VOT_SHORT_DET_MCU_N
R2928 R2929 R2930 R2931 R2933 100R3J-4-GP
R2937 R2939 4K7R3J-2-GP
C2909 SC20P50V2JN-1GP X2901 WTOSC0
C2910 SC20P50V2JN-1GP XTAL-12MHZ-8GP WTOSC1
OSCO OSCI
R2947 10KR3J-L1-GP
D2902 1N4148W-7-F-GP
C2912 SC10U6D3V5KX-1GP
NRST
VDD33V GND

GPIOC7/P17/IRQ1 GPIOC6/P16/IRQ0 GPIOC5/P15/TXD1 GPIOC4/P14/RXD1 GPIOC3/AD3 GPIOC2/AD2 GPIOC1/AD1 GPIOC0/AD0
GPIOD7/RXD2 GPIOD6/TXD2 GPIOD5/P13 GPIOD4/P12 GPIOD3/P11 GPIOD2/P10 GPIOD1/HIN2 GPIOD0/HIN1
GPIOE0 GPIOE1/PWM0 GPIOE2/PWM1 GPIOE3/LPWM GPIOE4/P06 GPIOE5/P07 GPIOE6/VIN2 GPIOE7/VIN1

C2902 SC1U10V3KX-3GP
R2907 R2980 R2915 4K7R3J-2-GP +3.3V_SB
POWER_Key MCU_IRQ TXD1 RXD1 POWER ADC_IN1 ADC_IN2
R2978 R2979 R2983 100R3J-4-GP
POWER_EN
R2923 0R3-0-U-GP RESET_L
R2977 4K7R3J-2-GP
R2927 10KR3J-L1-GP +3.3V_SB
R2925 10KR3J-L1-GP
MCU_RXD MCU_TXD
R2986 100R3J-4-GP LED_Amber(SLEEP)
ISP_I2C_ON
R2934 R2935 R2938 100R3J-4-GP
LED_GREEN_POWER LED_RED(STANDBY) LED_Green(PIC-OFF)
R2940 100R3J-4-GP LED_Amber(SLEEP)
R3002 0R3-0-U-GP VGA_HS_IN
R2941 4K7R3J-2-GP VGA_HS_MCU +3.3V_SB
R2943 100R3J-4-GP MCU_WP
R2901 0R3-0-U-GP
VCCH_RST -5V_PWM BRIGHT_ADJ BKLT_EN_N
SDA_3V_MCU SCL_3V_MCU
R2971 0R3-0-U-GP VGA_VS_IN & SDA_3V_MCU
R3001 0R3-0-U-GP VGA_VS_IN VGA_VS_MCU
R2964 R2965 R2917 4K7R3J-2-GP +3.3V_SB

CN2901 DVD-CON4-GP
R2995 R2996 NC 100R3J-4-GP SCL_ISP SDA_ISP +3.3V_SB
CN2904 DVD-CON3-13-GP
R2997 R2998 NC 100R3J-4-GP TXD1 RXD1

+1.2V R2989 4K7R3J-2-GP
+3.3V_SB R2984 100KR3J-L-GP
3,6,7,13,19 VOT_SHORT_DET_N Q2907 MMBT3904-7-F-GP VOT_SHORT_DET_MCU_N
R2991 R2992 1KR3J-L1-GP
R2990 51K8R3-GP +3.3V
+3.3V
C2931 SC10U6D3V5KX-1GP
C2932 SC10U6D3V6KX-4GP
C2933 SC10U6D3V5KX-1GP
C2934 SC1U25V3KX-GP
C2935 SCD1U25V3KX-GP
C2937 SCD1U25V3KX-GP
C2938 SCD1U25V3KX-GP
+3.3V_SB
C2930 SC10U6D3V5KX-1GP
C2936 SCD1U25V3KX-GP

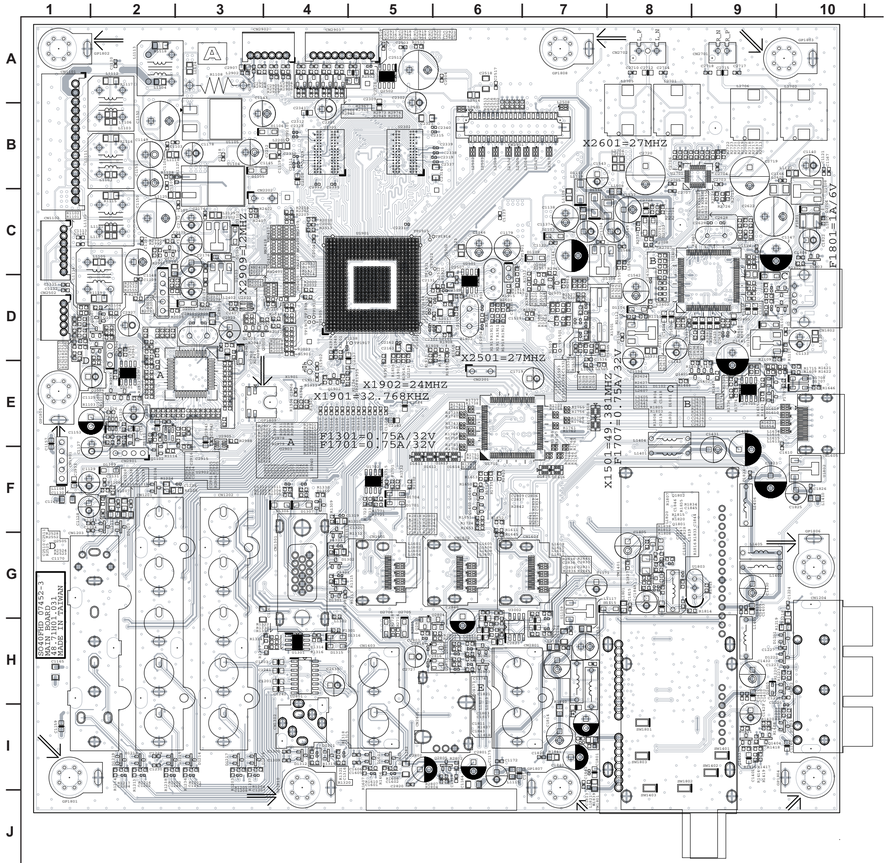
+3.3V_SB
C2929 SCD1U25V3KX-GP
C2939 SC10U6D3V5KX-1GP
R2985 2K7R3J-1-GP MCU_IRQ
U2904 XC6108C30AMRN-GP
VSEN VOUT VIN Cd VSS
R2993 4K7R3J-2-GP C2928 SCD1U25V3KX-GP
R2913 100R3J-4-GP
C2911 SCD47U25V3KX-1GP
+3.3V

+6.5V R2954 5K6R3-GP
R2956 10KR3J-L1-GP
C2924 SCD1U25V3KX-GP
U2902 XC6108C30AMRN-GP
C2901 SCD47U25V3KX-1GP
+3.3V_SB
C2915 SCD1U25V3KX-GP
C2916 SC10U6D3V5KX-1GP
R2953 2K7R3J-1-GP VOL_DROP_DET_N
R2955 0R3R3J-2-GP

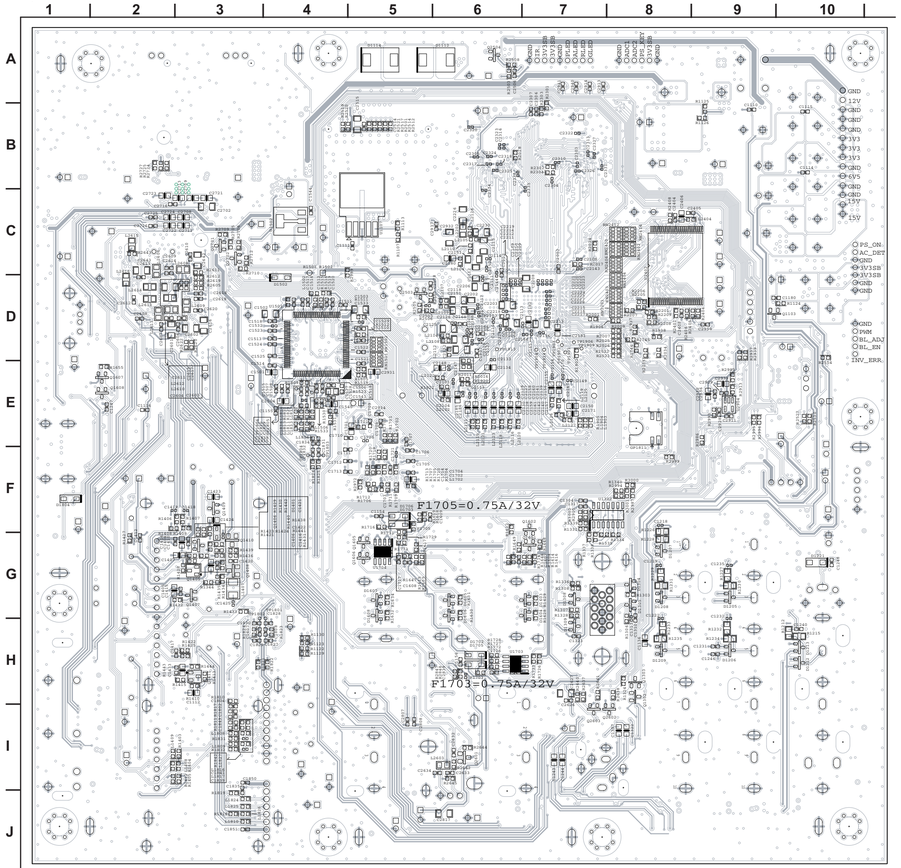
SCL_3V_M1
Q2906 2N7002-TF-GP SCL_3V_MCU
R2957 4K7R3J-2-GP POWER_EN
R2962 NC 0R3-0-U-GP
SDA_3V_M1
Q2901 2N7002-TF-GP SDA_3V_MCU
R2961 4K7R3J-2-GP POWER_EN
R2963 NC 0R3-0-U-GP

A 19/19
MCU

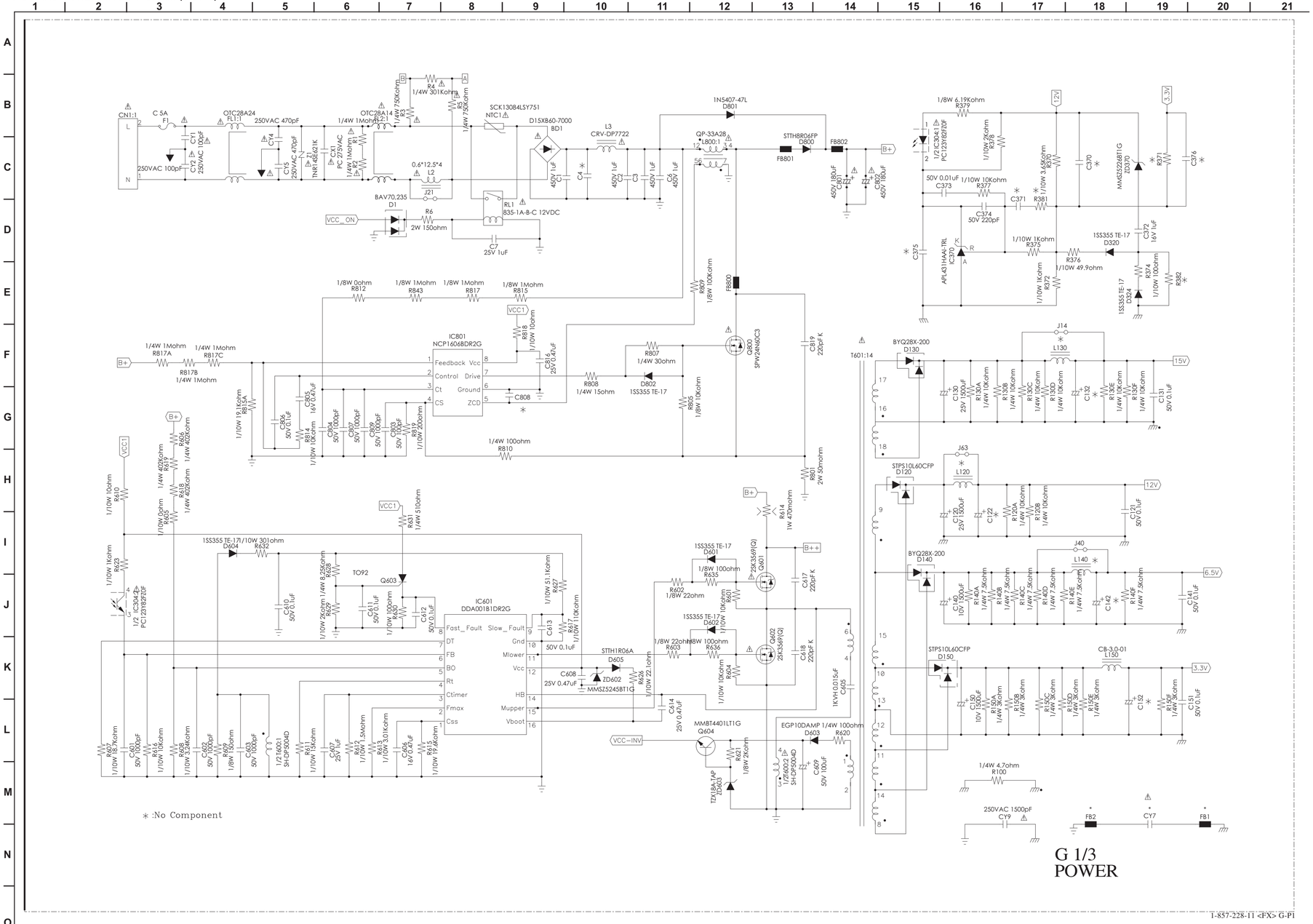
A [POWER, ANALOG INPUT, D-SUB INPUT, TUNER_S, DEMODULATOR, HDMI, HDMI SWITCH, TUNER ALPS & USB, HIDTV PRO, DDR, BOOT ROM & FLASH, LVDS INTERFACE, AUDIO PROCESSOR, AUDIO AMP, AUDIO OUT & MUTE, MCU]
COMPONENT SIDE



A [POWER, ANALOG INPUT, D-SUB INPUT, TUNER_S, DEMODULATOR, HDMI, HDMI SWITCH, TUNER ALPS & USB, HIDTV PRO, DDR, BOOT ROM & FLASH, LVDS INTERFACE, AUDIO PROCESSOR, AUDIO AMP, AUDIO OUT & MUTE, MCU]
CONDUCTOR SIDE



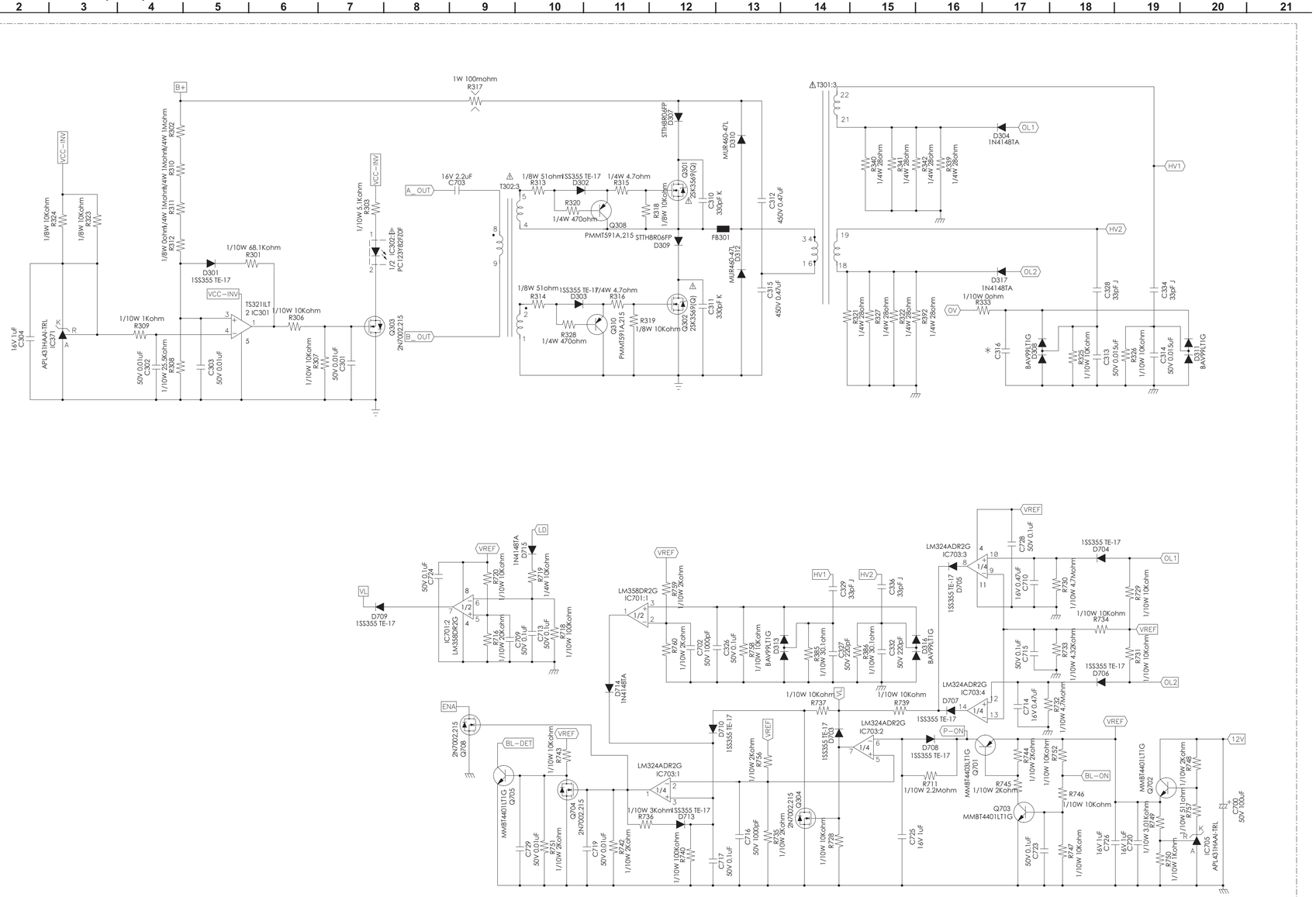
☛ G BOARD SCHEMATIC DIAGRAM (1 OF 3)



G 1/3
POWER

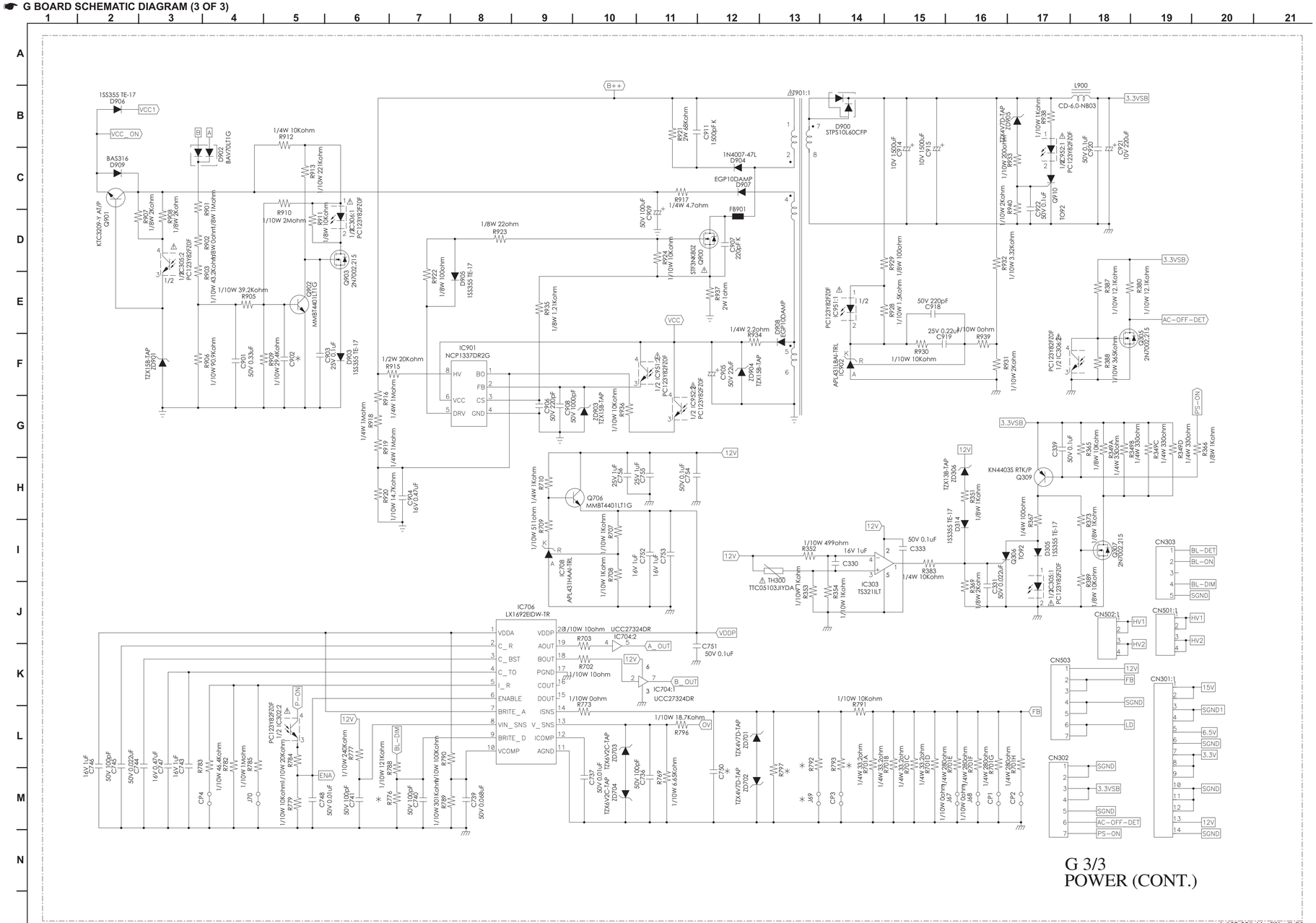
1-857-228-11 <FX> G-P1

☛ G BOARD SCHEMATIC DIAGRAM (2 OF 3)

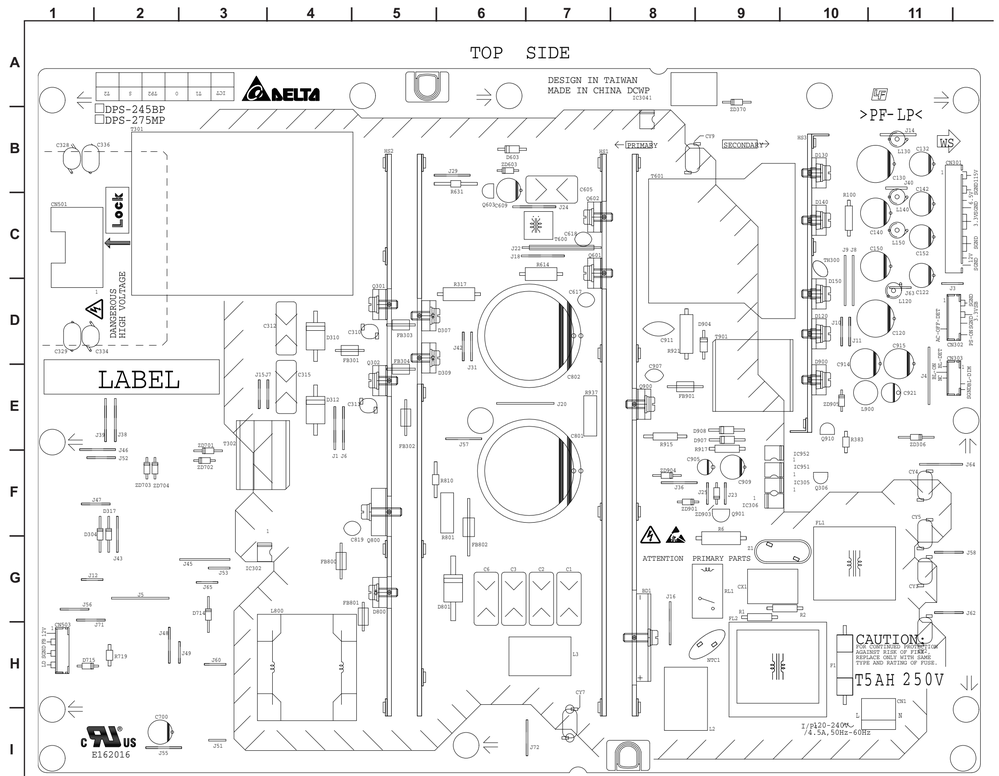


G 2/3
POWER (CONT.)

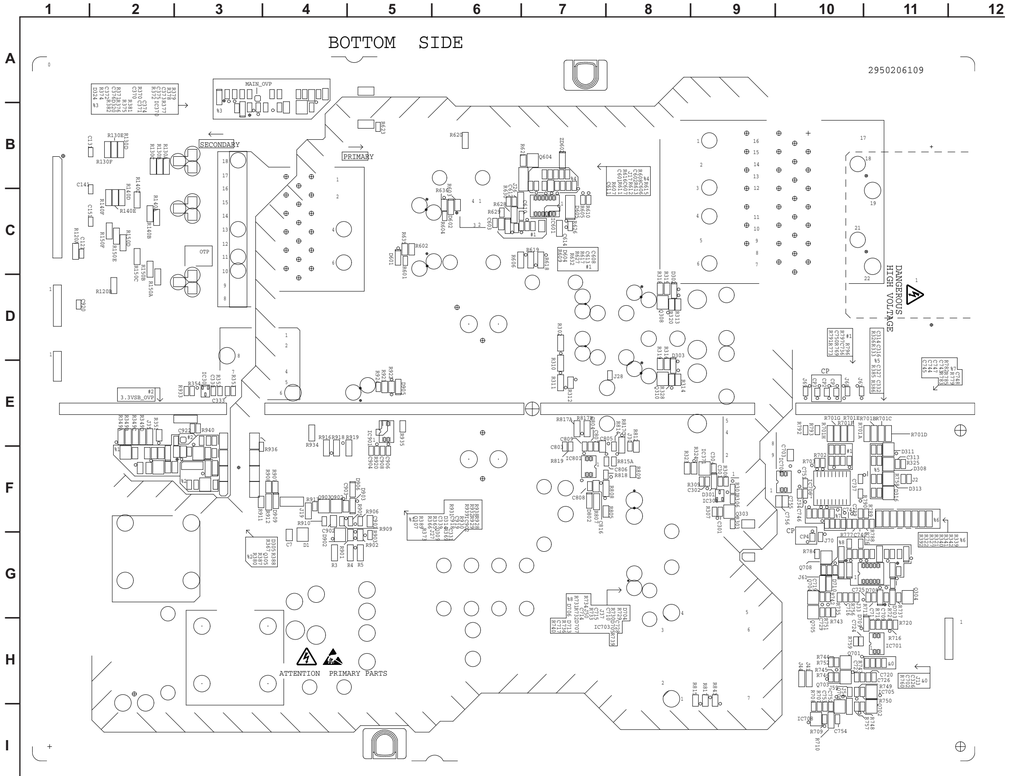
☛ G BOARD SCHEMATIC DIAGRAM (3 OF 3)



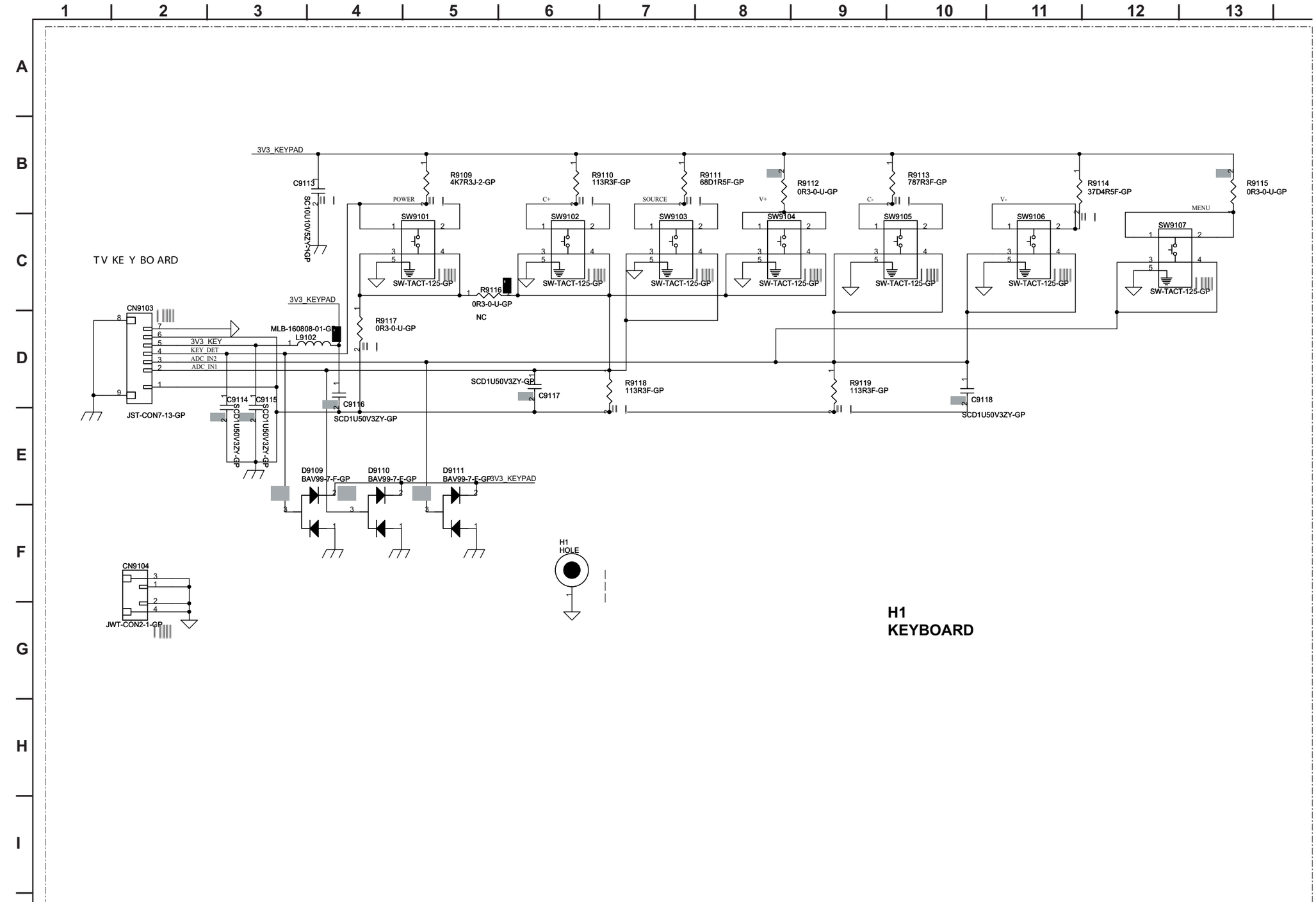
G [POWER]
COMPONENT SIDE



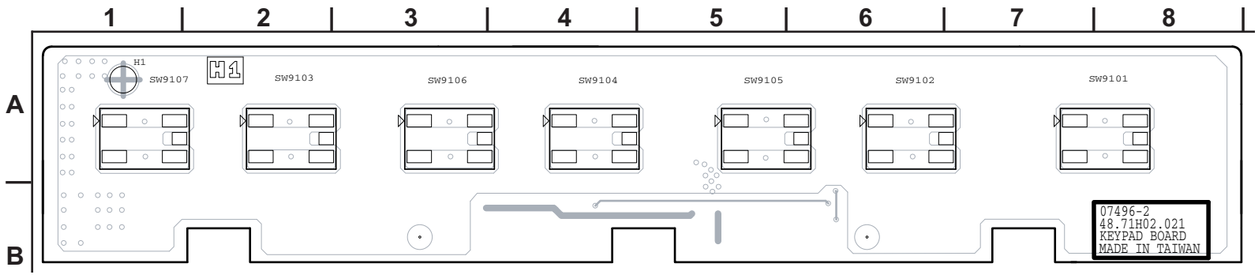
G [POWER]
CONDUCTOR SIDE



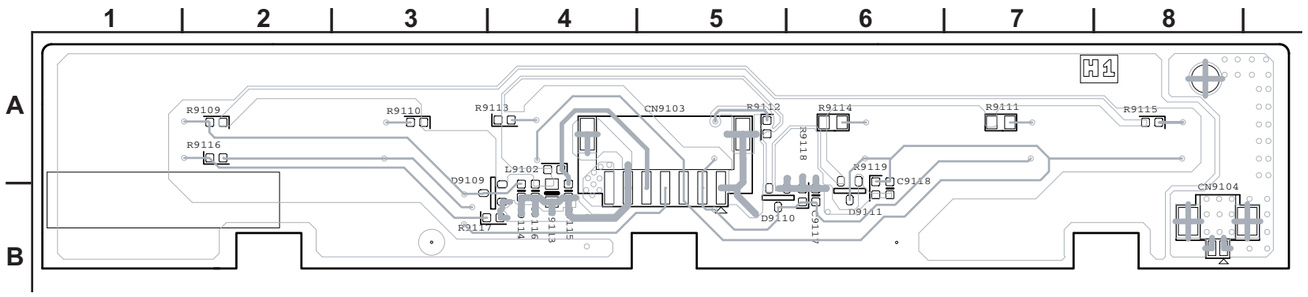
H1 BOARD SCHEMATIC DIAGRAM



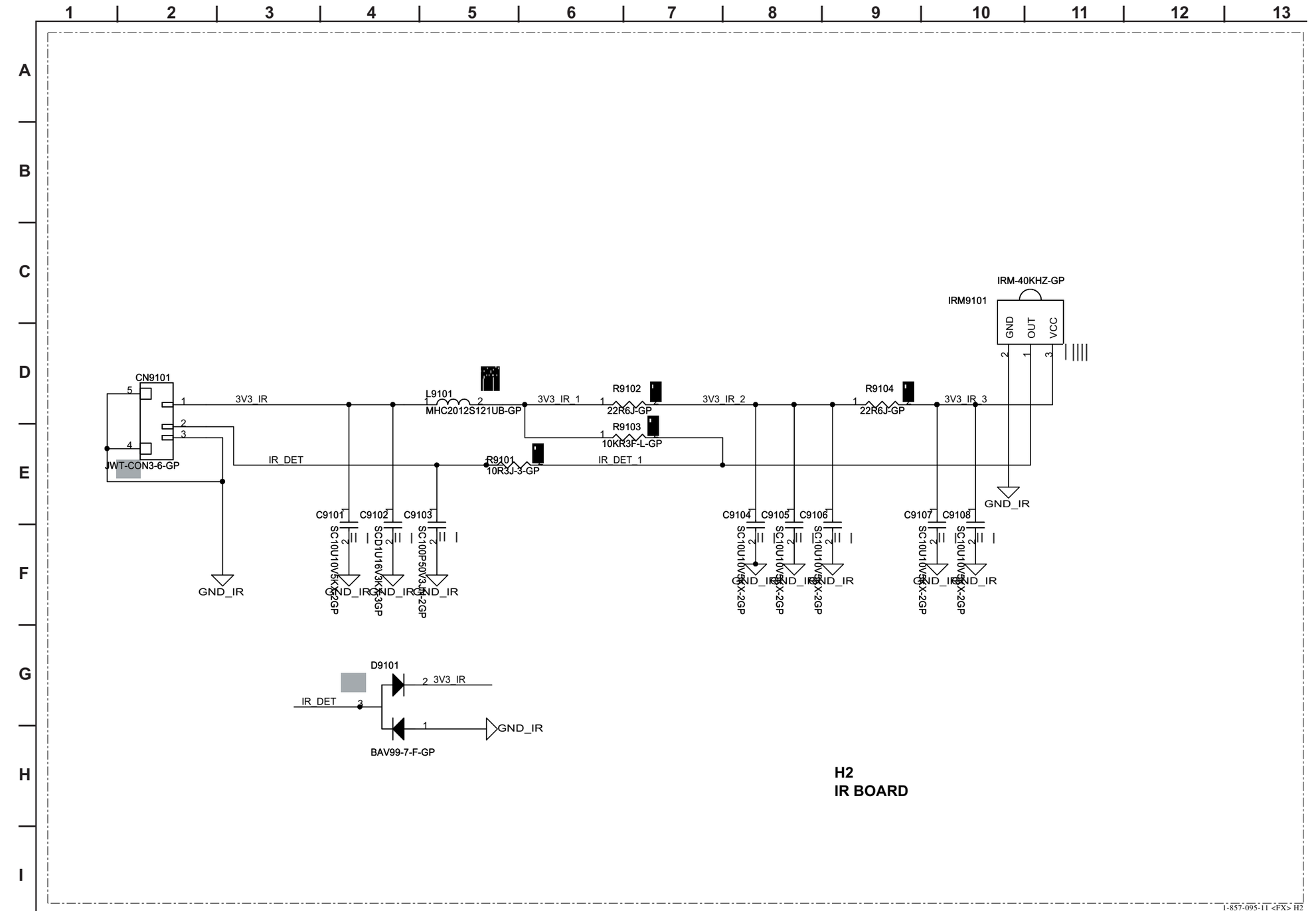
H1 [KEYBOARD]
COMPONENT SIDE



H1 [KEYBOARD]
CONDUCTOR SIDE

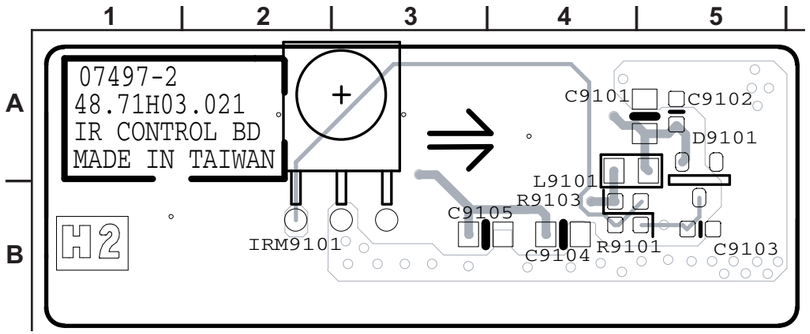


H2 BOARD SCHEMATIC DIAGRAM



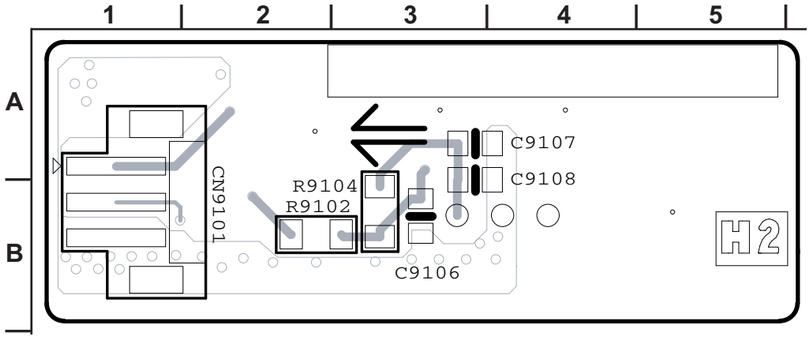
H2 [IR BOARD]

COMPONENT SIDE

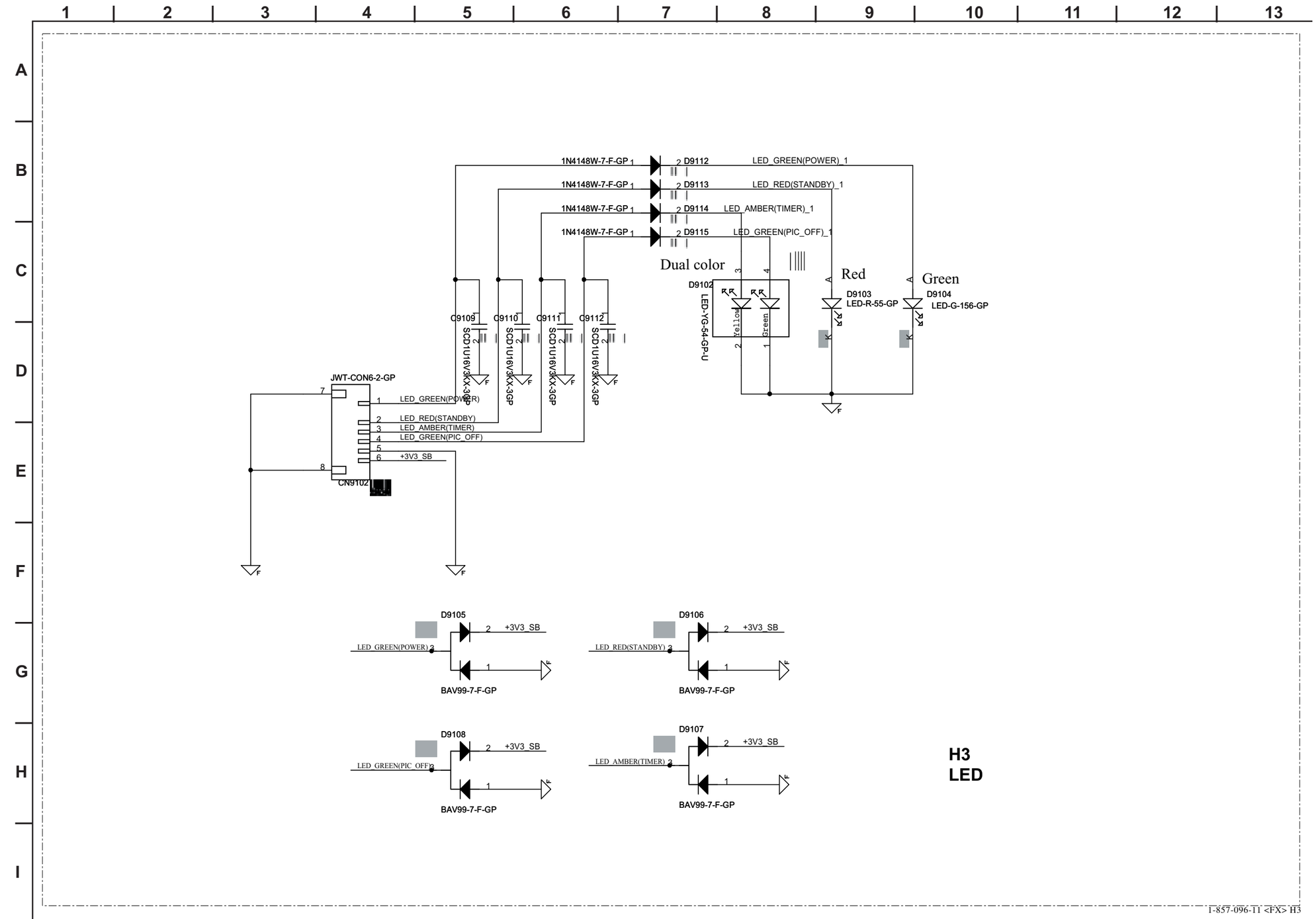


H2 [IR BOARD]

CONDUCTOR SIDE



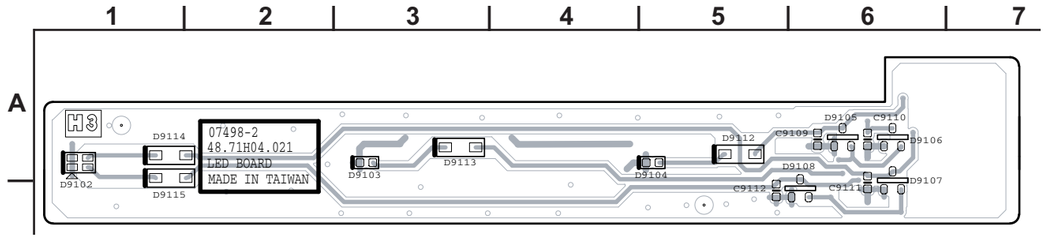
H3 BOARD SCHEMATIC DIAGRAM



I-857-096-11 <FX> H3

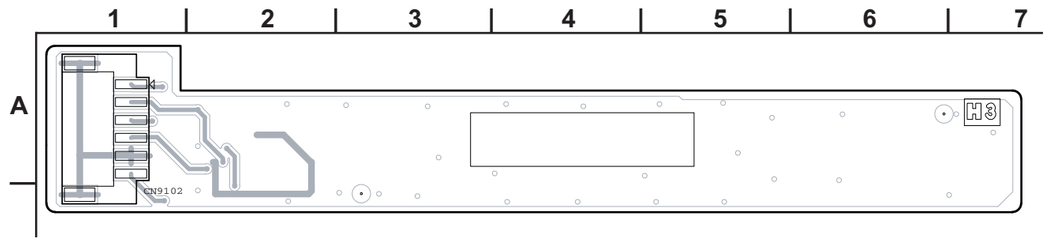
H3 [LED]

COMPONENT SIDE



H3 [LED]

CONDUCTOR SIDE



SECTION 4: EXPLODED VIEWS

Components not identified by a part number or description are not stocked because they are seldom required for routine service.

The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.

* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

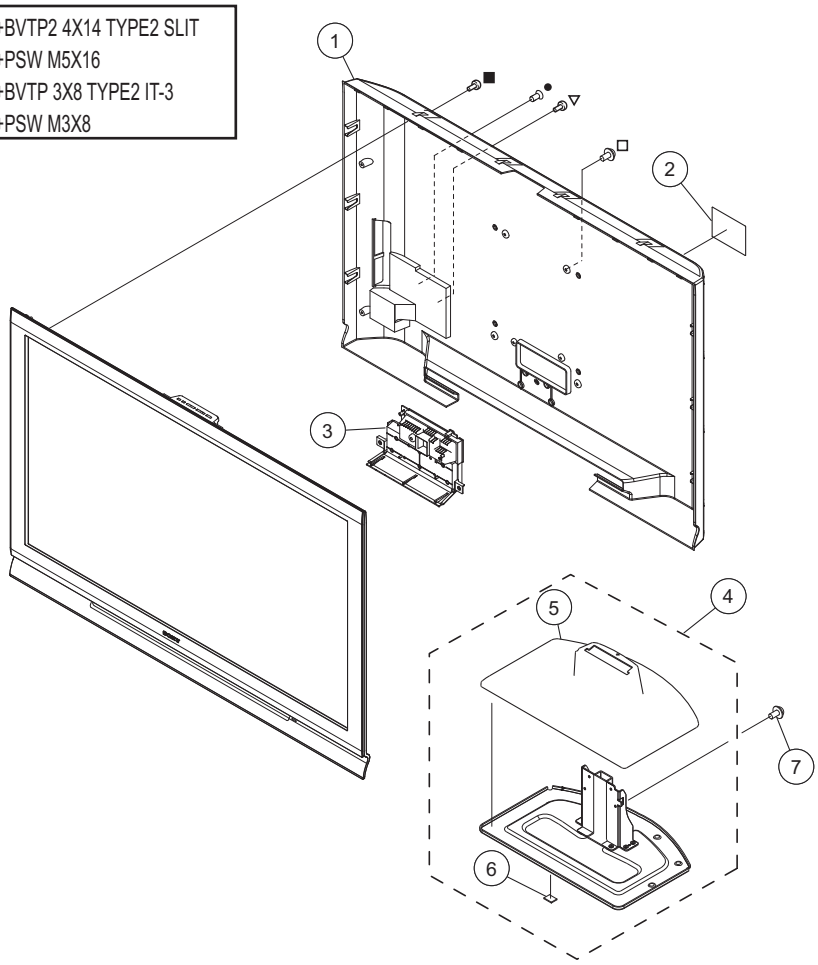
NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

4-1. REAR COVER ASSEMBLY AND TABLE-TOP STAND ASSEMBLY

(Check the Sony Electronics Service Information website for any additional service related issues for this model.)

■	7-685-662-29	SCREW, +BVTP2 4X14 TYPE2 SLIT
□	7-682-973-49	SCREW, +PSW M5X16
▽	7-685-646-79	SCREW, +BVTP 3X8 TYPE2 IT-3
●	4-382-854-01	SCREW, +PSW M3X8



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
1	X-2320-991-1	COVER, REAR ASSY(52)	
* 2	4-121-072-01	LABEL, INFORMATION	
3	4-120-877-01	COVER, UNDER (52)	
4	X-2320-993-1	TABLE-TOP STAND ASSY (52)	[5-6]
5	4-120-882-01	COVER,STAND (52)	
6	4-100-951-02	FOOT, STAND	
7	2-580-608-01	SCREW, +PSW M5X16	
	(SCREWS TO ATTACH TABLE-TOP STAND TO LCD TV)		
	For product protection and safety reasons, Sony strongly recommends that you use the screws provided with the TV		
	CAUTION: These screws cannot be used to secure the TV to the Wall Mount Brackets.		

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

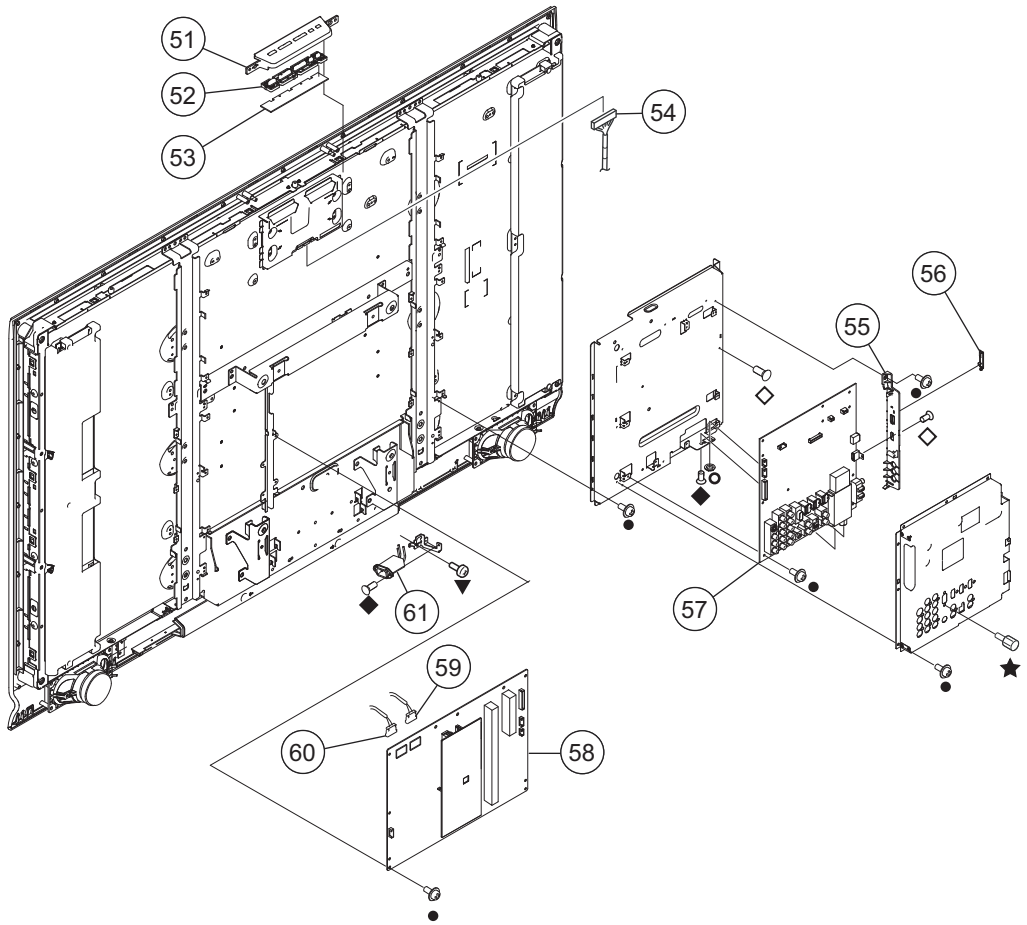
NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

4-2. CHASSIS

(Check the Sony Electronics Service Information website for any additional service related issues for this model.)

▼	7-682-973-09	SCREW, +PSW M5X8
●	4-382-854-01	SCREW, +PSW M3X8
○	3-682-691-21	NUT, WASHER HEXAGON
◆	7-682-245-09	SCREW, +K M3X4
◇	4-635-303-01	SCREW, FH 3X4
★	4-635-966-21	SCREW (HEX)



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
51	4-117-423-01	COVER,KEY	
52	3-874-655-01	FUNCTION KEY	
53	1-857-094-11	H1 BOARD, MOUNTED	
54	1-910-050-48	CONNECTOR ASSY LVDS 52	
55	3-874-657-01	COVER SIDE	
56	3-874-663-01	COVER, USB	
🔒 57	1-857-227-11	A BOARD, MOUNTED	
58	1-857-228-11	G BOARD, MOUNTED	
59	1-910-050-49	CONNECTOR ASSY INVERTER 52 L	
60	1-910-050-50	CONNECTOR ASSY INVERTER 52 R	
⚠ 61	1-822-418-11	AC INLET	

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

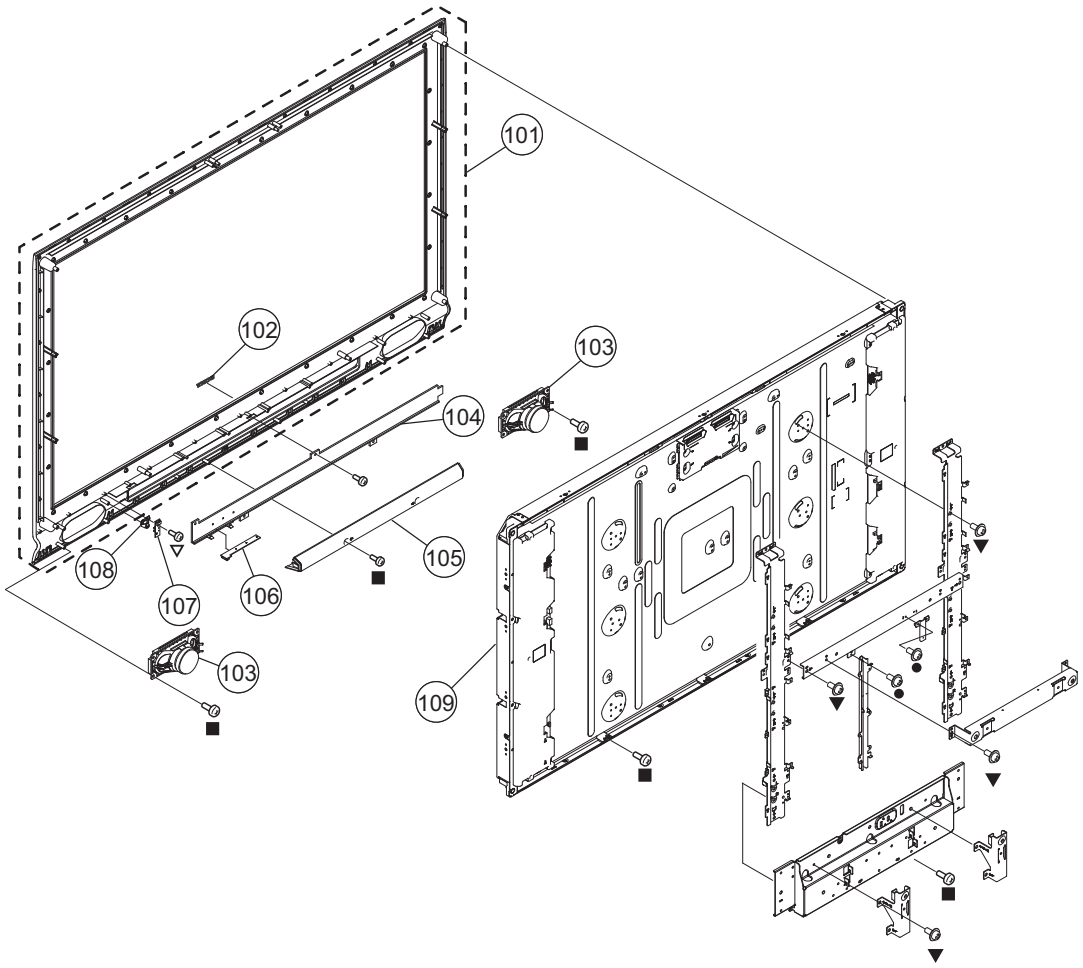
NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

4-3. BEZEL ASSEMBLY AND LCD PANEL

(Check the Sony Electronics Service Information website for any additional service related issues for this model.)

■	7-685-662-29	SCREW, +BVTP2 4X14 TYPE2 SLIT
▼	7-682-973-09	SCREW, +PSW M5X8
▽	7-685-646-79	SCREW, +BVTP 3X8 TYPE2 IT-3
●	4-382-854-01	SCREW, +PSW M3X8



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
101	X-2320-990-1	BEZEL ASSY (52)	[102]
102	2-635-749-11	EMBLEM, SONY NO.9	
103	1-826-959-11	LOUDSPEAKER (15X6.5CM)	
104	4-120-870-01	LENS, LED (52)	
105	3-874-669-01	COVER BOTTOM (46)	
106	1-857-096-11	H3 BOARD, MOUNTED	
107	1-857-095-11	H2 BOARD, MOUNTED	
108	4-117-336-01	LENS, IR	
109	1-802-651-12	LCD PANEL (52 FHD TFT)	

4-4. SCREW LEGEND

(Check the Sony Electronics Service Information website for any additional service related issues for this model.)

■	7-685-662-29	SCREW, +BVTP2 4X14 TYPE2 SLIT	REAR COVER-20 SPEAKER-8 BOTTOM FRAME-4 BOTOM COVER-2 LCD-3 LED-4	41
□	7-682-973-49	SCREW, +PSW M5X16	REAR COVER-5 TABLE-TOP STAND-4	9
▼	7-682-973-09	SCREW, +PSW M5X8	AC-BRACKET-1 BOTTOM VESA-4 EARTH WIRE-1 TOP VESA-2 CENTER FRAME-2 SPINE-10	20
▽	7-685-646-79	SCREW, +BVTP 3X8 TYPE2 IT-3	REAR TERMINAL-2 IR-1	3
●	4-382-854-01	SCREW, +PSW M3X8	REAR TERMINAL-2 G-8 A-9 SIDE BRACKET-1 MAIN BRACKET-5 MAIN SHIELD-8 G-SUPPORT2 G FRAME-2	35
○	3-682-691-21	NUT, WASHER HEXAGON	TUNER-1	1
◆	7-682-245-09	SCREW, +K M3X4	AC INLET-2 TUNER-1	3
◇	4-635-303-01	SCREW, FH 3X4	SIDE BRACKET-1 MAIN SHIELD-1	2
★	4-635-966-21	SCREW (HEX)	TERMINAL-2	2

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF. NO.	PART NO.	DESCRIPTION	VALUES
		ACCESSORIES AND PACKING	
*	4-123-412-01	BAG, PROTECTION	
*	4-121-065-01	CARTON, INDIVIDUAL (52)	
*	4-121-070-01	CUSHION, BOTTOM L (52)	
*	4-121-071-01	CUSHION, BOTTOM M (52)	
*	4-121-069-01	CUSHION, BOTTOM R (52)	
*	4-121-067-01	CUSHION, UPPER L (52)	
*	4-121-068-01	CUSHION, UPPER M (52)	
*	4-121-066-01	CUSHION, UPPER R (52)	
	3-870-416-41	GUIDE, QUICK SET UP (ENGLISH VERSION)	
	3-870-416-22	GUIDE, QUICK SET UP (FRENCH VERSION)	
	3-870-414-41	MANUAL, INSTRUCTION (ENGLISH VERSION)	
	3-870-414-23	MANUAL, INSTRUCTION (FRENCH VERSION)	
	3-870-415-21	MANUAL, INSTRUCTION (WALL MO)	
⚠	1-824-964-13	POWER-SUPPLY CORD SET (U/C)	
*	4-121-073-01	TRAY(52)	
		MISCELLANEOUS	
	2-580-608-01	SCREW, +PSW M5X16	
		(SCREWS TO ATTACH TABLE-TOP STAND TO LCD TV)	
		For product protection and safety reasons, Sony strongly recommends that you use the screws provided with the TV.	
		CAUTION: These screws cannot be used to secure the TV to the Wall Mount Brackets.	
	X-2186-602-1	SUPPORT BELT KIT	
		REMOTE COMMANDER	
	1-480-722-12	REMOTE COMMANDER (RM-YD025)	
	9-885-110-88	COVER, BATTERY (for RM-YD025)	

REF. NO.	PART NO.	DESCRIPTION	VALUES

APPENDIX A: ENCRYPTION KEY COMPONENTS

Encryption key components developed by Sony Corporation contain confidential information, and shall be handled under the non-disclosure obligations provided in the applicable agreement with Sony Corporation (and/or its subsidiary).

As part of this agreement specific instructions must be adhered to whenever a Circuit Board containing encryption key components is repaired and/or replaced pursuant to the following:

1) **In the service manual the Circuit Board(s) containing encryption key components shall be identified with a red outline and a .**

2) **Only repair boards or components listed in the service manual shall be utilized for replacement and/or repair.**

3) **Disassembly, decryption, or reverse-engineering component(s) is strictly prohibited.**

4) **Any board in which the Servicer replaces an encryption key component must be placed back into the set it orignally came from and the replaced defective component MUST BE DESTROYED. Boards cannot be swapped.**

5) **If a Circuit Board identified with a red outline and a in the service manual is deemed to be defective:**

   a) **and if a core charge is imposed and is covered under the product warranty, the defective un-repaired or modified board MUST BE RETURNED to Sony.**

   b) **and if the core charge is NOT covered under the product warranty, the defective un-repaired or modified board MUST BE DESTROYED.**

5) **If a unit is destroyed (such as field scrap), the Circuit Board identified with a red outline and a in the service manual MUST BE DESTROYED.**